

Q4 2021

Index Insights

US traditional weighted benchmark performance

- US large-cap continued to outperform in Q4 and 2021
- Growth outperformed value, continuing long term trend
- S&P 600 outperformed Russell 2000 in 2021, a reversal from the previous year

Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
S&P 500	11.03	28.71	26.07	18.47	16.55	1.38	1.20	17.41	13.08
S&P 400	8.00	24.76	21.41	13.09	14.20	0.96	0.88	22.14	15.92
S&P 600	5.64	26.82	20.11	12.42	14.50	0.86	0.82	23.90	17.69
Russell 1000	9.78	26.45	26.21	18.43	16.54	1.35	1.17	17.96	13.35
Russell 1000 Growth	11.64	27.60	34.08	25.32	19.79	1.65	1.32	18.43	14.04
Russell 1000 Value	7.77	25.16	17.64	11.16	12.97	0.90	0.91	19.33	13.82
Russell 2000	2.14	14.82	20.02	12.02	13.23	0.86	0.76	23.68	17.81
Russell 3000	9.28	25.66	25.79	17.97	16.30	1.31	1.14	18.19	13.52
Russell 3000 Growth	10.89	25.85	33.21	24.56	19.39	1.61	1.29	18.53	14.14
Russell 3000 Value	7.54	25.37	17.65	11.00	12.89	0.89	0.90	19.62	14.02
DJ US Total Market	9.14	25.66	25.72	17.92	16.24	1.31	1.14	18.20	13.53
MSCI USA	10.08	26.97	26.59	18.75	16.64	1.38	1.19	17.76	13.25
S&P 500 Equal Weight	9.01	29.63	23.64	15.73	15.64	1.10	1.03	20.61	14.64

Global traditional weighted benchmark performance

- US markets continued to lead global markets across all time frames
- In contrast to US, international value outperformed growth in 2021
- Emerging markets is the only segment with negative returns in Q4 and 2021
- Emerging market small-cap outperformed large cap, continuing recent trends

Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
MSCI ACWI IMI	6.10	18.22	20.20	14.12	11.84	1.09	0.86	17.53	13.39
MSCI ACWI ex USA IMI	1.64	8.53	13.62	9.83	7.57	0.78	0.54	17.37	14.16
MSCI ACWI	6.68	18.54	20.38	14.40	11.85	1.13	0.87	17.08	13.19
MSCI ACWI ex USA	1.82	7.82	13.18	9.61	7.28	0.76	0.53	17.03	14.06
MSCI World	7.77	21.82	21.70	15.03	12.70	1.18	0.93	17.30	13.21
MSCI World ex USA	3.14	12.62	14.07	9.63	7.84	0.80	0.56	17.42	14.11
MSCI World ex USA Growth	4.27	11.57	19.11	13.37	9.66	1.18	0.73	15.14	13.05
MSCI World ex USA Value	1.91	13.26	8.66	5.69	5.83	0.46	0.40	20.73	15.91
MSCI World ex USA Small	0.39	11.14	16.27	11.03	9.99	0.81	0.66	20.02	15.35
MSCI EAFE	2.69	11.26	13.54	9.55	8.03	0.78	0.57	17.16	14.14
MSCI Emerging Markets	-1.31	-2.54	10.94	9.87	5.49	0.61	0.37	18.60	16.37
MSCI Emerging Markets Small Cap	1.33	18.75	16.46	11.47	7.42	0.76	0.47	22.20	17.29
MSCI Frontier Markets	0.71	19.73	12.74	9.57	7.34	0.74	0.55	17.15	13.54

Source: Morningstar Direct, Bloomberg, LGIM America.

All "Traditional Weighted" benchmarks above have at least 10 years of actual performance that can be verified by accessing the provider's website for further information. LGIMA has obtained this information from the index provider and recommends that all information be verified on the provider's website. Index provider information has not been independently verified by LGIMA for its accuracy or completeness, therefore the information obtained from third party sources cannot be guaranteed. Please refer to the disclosures at the end of this presentation for more information.

US alternative weighted benchmark performance

- Quality is the only factor to outperform in Q4, continuing trend as best performer
- Value reversed to highest in 2021 from the worst in 2020
- Momentum also reversed, from best to worst, in 1-year period
- Dispersion in momentum was high in Q4

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Mkt Cap	S&P 500	11.03	28.71	26.07	18.47	16.55	1.38	1.20	17.41	13.08
	Composite Average Relative to Market Cap									
Relative to Mkt Cap	Value	-2.48	1.33	-7.91	-6.58	-2.73	0.86	0.91	21.91	15.02
	Low Vol	-0.51	-5.10	-6.83	-4.05	-2.26	1.14	1.16	15.82	11.58
	Momentum	-2.52	-8.11	-2.70	-0.66	-0.33	1.23	1.18	18.08	13.06
	Quality	0.33	0.33	0.69	0.82	0.38	1.43	1.23	17.08	12.93
	Size	-4.61	-5.86	-4.06	-3.94	-1.48	0.98	0.97	22.08	14.92
	Composite Min-Max Spread									
Min-Max Spread	Value	3.04	10.61	7.43	6.38	2.97	0.48	0.31	9.65	6.03
	Low Vol	4.74	7.54	7.63	6.73	3.78	0.44	0.33	2.86	1.46
	Momentum	9.53	12.33	8.25	6.03	3.70	0.59	0.20	4.98	0.66
	Quality	2.93	5.26	6.89	5.59	2.26	0.39	0.13	1.49	0.47
	Size	5.06	6.27	3.47	1.99	1.50	0.20	0.07	4.15	1.87

Global developed ex USA alternative weighted benchmark performance

- Quality continued as best quarterly factor
- For periods over 1-year, quality and momentum outperformed
- Value was the only outperformer in 2021, reversing from worst in 2020
- Size was the worst performer in Q4

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Mkt Cap	MSCI World ex USA	3.14	12.62	14.07	9.63	7.84	0.80	0.56	17.42	14.11
	Composite Average Relative to Market Cap									
Relative to Mkt Cap	Value	-1.28	1.31	-3.70	-2.39	-0.67	0.54	0.48	20.58	15.80
	Low Vol	0.37	-1.06	-3.95	-1.42	0.15	0.68	0.66	14.69	11.93
	Momentum	0.58	-3.71	1.79	1.59	1.52	0.99	0.71	15.34	12.85
	Quality	1.10	-0.25	2.87	2.68	1.65	1.02	0.71	15.87	13.11
	Size	-3.35	-4.34	-1.99	-0.76	0.67	0.66	0.60	18.73	14.38
	Composite Min-Max Spread									
Min-Max Spread	Value	1.62	1.17	2.91	2.49	2.20	0.14	0.14	0.76	0.89
	Low Vol	2.34	4.97	6.40	3.95	2.12	0.39	0.19	4.20	2.48
	Momentum	1.45	4.21	4.29	2.19	0.43	0.33	0.06	1.54	0.94
	Quality	3.08	2.69	7.53	4.63	0.72	0.51	0.06	1.92	0.29
	Size	2.54	4.20	1.46	0.73	1.12	0.07	0.06	1.00	0.96

Source: Morningstar Direct, Bloomberg, Scientific Beta, LGIM America.

Composite data is aggregated by LGIM America and hypothetical. Hypothetical performance results have many inherent limitations and no representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. Please refer to the disclosures at the end of this presentation for more information.

Emerging markets alternative weighted benchmark performance

- Emerging market factors all outperformed in 2021, a reversal from prior years
- Low volatility continued to be strong quarter over quarter
- Size, low vol, and value were the top performing factors in 2021

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Mkt Cap	MSCI EM	-1.31	-2.54	10.94	9.87	5.49	0.61	0.37	18.60	16.37
	Composite Average Relative to Market Cap									
Relative to Mkt Cap	Value	0.80	11.11	-3.54	-2.62	-1.37	0.42	0.28	19.25	17.26
	Low Vol	2.56	12.46	-3.28	-2.22	-0.25	0.49	0.39	15.75	13.97
	Momentum	1.64	2.55	2.35	1.77	1.57	0.67	0.46	19.40	15.95
	Quality	2.66	5.86	0.75	-0.24	0.39	0.66	0.41	17.60	15.05
	Size	1.66	15.70	1.69	-0.31	1.29	0.63	0.44	20.35	16.70
	Composite Min-Max Spread									
Min-Max Spread	Value	0.62	9.80	3.45	2.05	1.56	0.16	0.08	0.56	2.10
	Low Vol	1.50	12.37	4.89	4.45	2.05	0.29	0.13	3.22	2.55
	Momentum	0.48	2.31	13.49	10.43	4.82	0.48	0.23	5.39	2.95
	Quality	3.96	11.19	9.05	5.14	2.52	0.47	0.16	0.60	1.32
	Size	2.19	12.75	9.79	5.16	3.18	0.36	0.15	4.30	2.33
	Composite Min-Max Spread									

Environmental and socially responsible weighted benchmark performance

- ESG and climate indexes continued strong results, despite strong returns from the energy sector

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Mkt Cap	MSCI World	7.77	21.82	21.70	15.03	12.70	1.18	0.93	17.30	13.21
	Russell 1000	9.78	26.45	26.21	18.43	16.54	1.35	1.17	17.96	13.35
	FTSE Developed	7.46	20.87	21.33	14.86	12.58	1.16	0.92	17.31	13.21
ESG	MSCI World ESG	9.18	24.70	22.60	15.50	12.82	1.25	0.95	16.82	12.98
	MSCI Wld Low Carbon Ldrs	7.75	21.99	22.06	15.22	13.05	1.19	0.95	17.38	13.30
	MSCI Wld Low Carbon Trgt	7.80	21.55	22.10	15.17	12.89	1.19	0.94	17.37	13.25
	MSCI World SRI	12.08	27.04	25.48	17.91	13.73	1.42	1.02	16.43	12.93
SRI	Russell 1000 Climate	10.40	26.80	27.60	19.20	--	--	--	19.50	--
	FTSE4Good US	12.14	30.57	28.88	20.67	18.49	1.48	1.29	17.71	13.41
	FTSE Custom Global Developed Component Climate	7.68	20.69	22.35	15.34	13.02	1.21	0.95	17.32	13.19

Source: Morningstar Direct, Bloomberg, Scientific Beta, FTSE-Russell, LGIM America.

Composite data is aggregated by LGIM America and hypothetical. Hypothetical performance results have many inherent limitations and no representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. Please refer to the disclosures at the end of this presentation for more information.

Fixed income benchmark performance

- US outperformed in Q4 and 2021
- High yield outperformed investment grade in 2021, a reversal from 2020
- High yield and US TIPS were the only positive returns in 2021
- Long Treasury was first to worst YoY

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Agg	Barclays Global Agg	-0.67	-4.71	3.59	3.36	1.77	0.63	0.29	4.45	4.36
	Barclays US Agg	0.01	-1.54	4.79	3.57	2.90	1.18	0.78	3.40	2.98
Credit	iBoxx US Investment Grade	0.29	-1.49	8.74	5.85	5.22	1.03	0.80	7.70	5.81
	iBoxx US High Yield	0.74	4.48	7.83	5.60	5.91	0.83	0.85	8.57	6.29
Rates	Barclays US TIPS	2.36	5.96	8.44	5.34	3.09	1.90	0.60	3.90	4.23
	Barclays US Treasury	0.18	-2.32	4.07	3.07	2.13	0.76	0.44	4.38	3.56
	Barclays US Treasury: Intermediate	-0.57	-1.72	3.04	2.33	1.68	0.90	0.49	2.52	2.22
EM	Barclays US Treasury: Long	3.08	-4.65	8.82	6.54	4.51	0.66	0.40	12.92	11.03
	JPM Emerging Market Global Core	-0.22	-2.05	6.35	4.73	5.27	0.53	0.59	11.30	8.27

REITs, infrastructure and commodity benchmark performance

- Commodities experienced a major reversal from 2020, in large part due to inflation pressures
- GSCI outperforms BBG Commodity in 2021, with a higher energy focus
- US REITs reversed from 2020 to outperform global REITs by wide margin
- Infrastructure underperformed market cap in 2021

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Commo	BBG Commodity	-1.56	27.11	9.86	3.66	-2.85	0.63	-0.20	15.46	13.33
	S&P GSCI	1.51	40.35	7.99	2.80	-5.50	0.39	-0.17	28.75	21.74
REITs	FTSE EPRA Nareit United States	16.28	42.83	17.10	9.91	10.85	0.82	0.68	21.07	16.27
	FTSE EPRA Nareit Dv ex US	1.97	8.15	6.71	6.42	7.17	0.39	0.50	19.48	15.07
	FTSE EPRA Nareit Global	8.98	22.01	10.41	7.52	8.19	0.57	0.58	19.54	14.58
Infrastructure	FTSE Global Core Infrastructure	9.83	16.96	13.03	10.48	9.40	0.84	0.80	14.94	11.23
	MSCI ACWI Infrastructure	3.56	5.16	7.85	5.48	5.52	0.56	0.48	13.88	11.25
	Magellan Global Core Infrastructure	8.06	14.39	13.15	10.14	--	0.84	--	15.18	--

Source: Morningstar Direct, FTSE, Bloomberg, and LGIM America.

Multi-factor benchmark performance

- Emerging markets multi-factor strong in 2021, a reversal from prior year
- Developed market multi-factor continued to underperform

	Benchmark	Q4	1-yr	3-yr	5-yr	10-yr	3-yr Sharpe Ratio	10-yr Sharpe Ratio	3-yr Vol	10-yr Vol
Mkt Cap Global	MSCI ACWI	6.68	18.54	20.38	14.40	11.85	1.13	0.87	17.08	13.19
	MSCI ACWI Div. Multi-Factor	7.26	18.94	17.35	12.82	11.98	0.97	0.88	17.28	13.25
	SciBeta Global MBMS 4F EW	6.20	17.80	15.60	11.31	10.88	0.89	0.84	17.14	12.54
	SciBeta Global HFI 6F EW	6.42	18.37	15.32	11.24	11.33	0.89	0.90	16.76	12.13
	FTSE AW Comprehensive Factor	5.63	18.89	16.11	11.73	--	0.91	--	17.20	--
	RAFI Multi-Factor Global	5.41	18.85	16.47	--	--	0.91	--	17.49	--
	Average	6.18	18.57	16.17	11.78	11.40	0.91	0.87	17.17	12.64
	Min/Max Spread	1.84	1.13	2.03	1.58	1.10	0.08	0.06	0.73	1.13
Mkt Cap USA	S&P 500	11.03	28.71	26.07	18.47	16.55	1.38	1.20	17.41	13.08
	MSCI USA Div. Multi-Factor	10.96	25.13	20.84	14.14	14.98	1.10	1.06	18.10	13.51
	SciBeta US MBMS 4F EW	9.37	24.43	20.24	14.21	14.43	1.08	1.08	17.92	12.75
	SciBeta US HFI 6F EW	9.67	24.74	20.08	14.25	14.95	1.10	1.14	17.40	12.40
	Russell 1000 Cmprhnsve Factor	10.17	26.81	21.03	14.25	15.30	1.05	1.07	19.32	13.64
	RAFI Multi-Factor U.S. TR	9.15	27.22	21.14	14.66	14.96	1.11	1.09	18.09	13.05
	Average	9.86	25.67	20.67	14.30	14.92	1.09	1.09	18.17	13.07
	Min/Max Spread	1.81	2.79	1.07	0.53	0.86	0.06	0.08	1.92	1.23
Mkt Cap Dev xUSA	MSCI World ex USA	3.14	12.62	14.07	9.63	7.84	0.80	0.56	17.42	14.11
	MSCI World ex USA DMF	2.12	11.61	10.87	8.11	8.61	0.62	0.62	17.70	13.90
	SciBeta Dev xUS MBMS 4F EW	2.54	11.36	12.03	9.03	8.64	0.70	0.64	17.15	13.35
	SciBeta Dev xUS HFI 6F EW	2.52	12.27	11.65	9.17	9.21	0.69	0.69	16.97	13.11
	FTSE Dev xUS Cmprhnsve Factor	1.95	9.79	12.38	9.56	9.22	0.74	0.71	16.48	12.76
	RAFI Multi-Factor Developed ex-U.S	2.19	12.16	12.77	9.23	--	0.75	--	16.93	--
	Average	2.26	11.44	11.94	9.02	8.92	0.70	0.67	17.05	13.28
	Min/Max Spread	0.59	2.47	1.90	1.45	0.61	0.12	0.09	1.22	1.14
Mkt Cap Emerging	MSCI Emerging Markets	-1.31	-2.54	10.94	9.87	5.49	0.61	0.37	18.60	16.37
	MSCI EM Div. Multi-Factor	0.80	7.65	13.11	10.58	6.97	0.72	0.45	18.41	16.52
	SciBeta EM MBMS 4F EW	0.07	5.44	6.37	6.37	4.60	0.39	0.34	17.24	14.62
	SciBeta EM HFI 6F EW	0.33	6.40	5.86	5.97	4.95	0.37	0.37	16.97	14.02
	FTSE EM Comprehensive Factor	-0.06	16.65	11.39	8.17	6.28	0.63	0.43	18.75	15.71
	RAFI Multi-Factor Emerging Markets	1.15	12.82	13.36	10.44	--	0.68	--	20.11	--
	Average	0.46	9.79	10.02	8.31	5.70	0.56	0.40	18.29	15.22
	Min/Max Spread	1.21	11.21	7.50	4.61	2.37	0.35	0.11	3.14	2.51

Sources: Morningstar Direct, Bloomberg, Scientific Beta, LGIM America.

Sharpe Ratios intentionally left out when negative, or where data unavailable

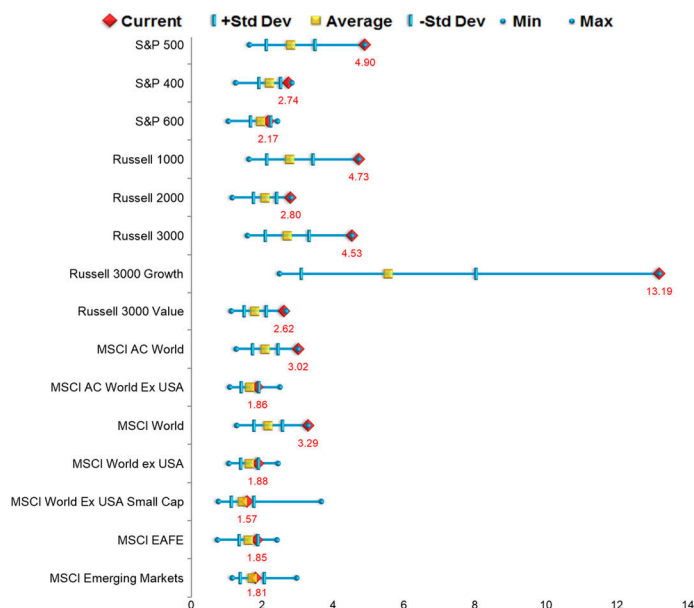
SciBeta MBMS 4F EW denotes Multi-Beta Multi-Strategy Four-Factor Equal Weight and HFI 6F EW denotes High-Factor-Intensity Diversified Multi-Beta Multi-Strategy 6-Factor 4-Strategy Equal Weight.

The FTSE AW Comp performance is hypothetical prior to November 3, 2016. The MSCI ACWI Diversified Multiple-Factor Index performance is hypothetical prior to Feb 17, 2015. SciBeta US MBMS 4F EW, SciBeta Dev xUS MBMS 4F EW, and SciBeta EM MBMS 4F EW performance is hypothetical prior to December 20, 2013. SciBeta US HFI 6F EW, SciBeta Dev xUS HFI 6F EW, and SciBeta EM HFI 6F EW performance is hypothetical prior to March 16, 2018. Hypothetical performance results have many inherent limitations and no representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. Please refer to the disclosures at the end of this presentation for more information.

US and global market cap weighted valuations

- US indexes continued at or near historical highs
- International were above historical averages

Price-to-book: 15-year relative value



Source: Bloomberg, MSCI, LGIM America as of end of Q4 2021.

Currency summary – MSCI global indexes

- US Dollar index outperformed the global basket in 2021
- Currency exposure hurt USD based index returns

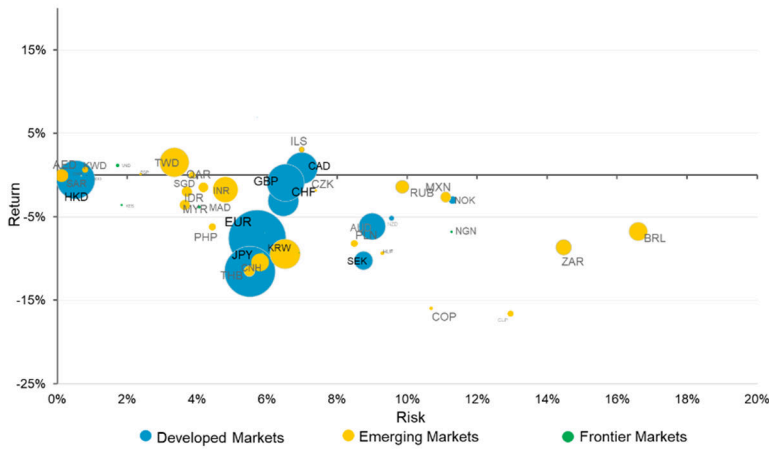
Index	USD Return %		Local Return %		Currency Impact %	
	3M	1-yr	3M	1-yr	3M	1-yr
MSCI ACWI	6.68%	18.54%	7.03%	20.90%	-0.35%	-2.36%
MSCI ACWI ex US	1.82%	7.82%	2.69%	13.04%	-0.87%	-5.22%
MSCI USA	10.08%	26.97%	10.08%	26.97%	0.00%	0.00%
MSCI World ex US	3.14%	12.62%	4.21%	19.30%	-1.07%	-6.68%
MSCI EAFE	2.69%	11.26%	3.91%	18.70%	-1.22%	-7.44%
MSCI Canada	7.18%	25.98%	6.87%	24.91%	0.31%	1.07%
MSCI EM	-1.31%	-2.54%	-0.91%	-0.19%	-0.40%	-2.35%
MSCI Frontier Markets	0.71%	19.73%	1.51%	22.96%	-0.80%	-3.23%

US Dollar Index	1.53%	6.37%
-----------------	-------	-------

Sources: LGIM America, MSCI, Bloomberg as of end of Q4 2021.

One-year currency risk/return

- Turkish Lira was down 80% in 2021 (not pictured)



Sources: MSCI, LGIMA as of end of Q4 2021.

SciBeta Global Factor Indexes Periodic Table Investment Returns

Single Factor Indexes based on SciBeta's diversified multi-strategy methodology

- Value reversed from worst to first in 2021
- Momentum was the worst factor in 2021, after a period of strong performance
- High profitability fares well across last 5 years
- Low volatility has been strong in recent quarters, with increased market volatility

	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Q1	Q2	Q3	Q4
Size	17.45	Momentum 26.14	Low Vol 9.70	HFI 6F 3.04	Value 11.18	Momentum 27.73	Low Vol -6.12	MSCI ACWI 26.60	MSCI ACWI 16.25	Value 20.20	Value 9.53	Momentum 8.18	Low Vol -0.20	High Profitability 7.53
Low Investment	17.12	Low Investment 25.82	HFI 6F 9.12	Momentum 2.70	Low Investment 9.54	High Profitability 25.27	High Profitability -7.65	High Profitability 25.82	High Profitability 13.42	High Profitability 19.27	Low Investment 7.72	High Profitability 7.96	MSCI ACWI -1.05	Low Vol 7.30
Value	16.70	High Profitability 25.16	High Profitability 8.16	Low Vol 2.13	MSCI ACWI 7.86	MSCI ACWI 23.97	MSCI ACWI -9.41	Momentum 23.33	Momentum 10.92	Low Investment 18.98	HFI 6F 6.35	MSCI ACWI 7.39	HFI 6F -1.44	MSCI ACWI 6.68
Low Vol	16.59	HFI 6F 24.34	Size 7.38	High Profitability 2.11	Low Vol 6.30	Low Investment 22.93	HFI 6F -9.61	Low Vol 22.89	Size 6.75	Low Vol 18.58	Size 6.33	Size 6.31	Low Investment -1.44	HFI 6F 6.42
MSCI ACWI	16.13	Size 23.26	Low Investment 6.69	Size 0.52	HFI 6F 6.11	HFI 6F 22.86	Low Investment -10.35	Size 22.82	HFI 6F 5.94	MSCI ACWI 18.54	Low Vol 4.78	HFI 6F 6.12	Size -1.46	Low Investment 6.37
High Profitability	16.07	Value 22.86	Value 6.07	Low Investment -0.34	Size 5.89	Size 22.69	Size -10.75	Low Investment 22.69	Low Vol 5.06	HFI 6F 18.37	MSCI ACWI 4.57	Low Vol 5.69	High Profitability -1.68	Value 6.33
Momentum	15.99	MSCI ACWI 22.80	Momentum 5.53	MSCI ACWI -2.36	High Profitability 5.28	Value 21.75	Momentum -12.09	HFI 6F 22.30	Low Investment 4.99	Size 17.52	High Profitability 4.50	Low Investment 5.35	Value -1.69	Momentum 5.56
HFI 6F	15.76	Low Vol 20.96	MSCI ACWI 4.16	Value -3.38	Momentum 1.17	Low Vol 21.50	Value -12.47	Value 21.80	Value 4.29	Momentum 14.71	Momentum 2.31	Value 4.99	Momentum -1.81	Size 5.51

Sources: LGIM America, Scientific Beta, Morningstar Direct. HFI 6F equals SciBeta Global High-Factor-Intensity Multi-Beta Multi-Strategy Six-Factor EW. Performance is hypothetical prior to December 20, 2013. SciBeta Global HFI MBMS 6F EW performance is hypothetical prior to March 16, 2018. Hypothetical performance results have many inherent limitations and no representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program.

Global GICS Sector Index Returns (MSCI ACWI)

- Energy was top sector in 2021, a reversal from worst in previous two years
- Information technology continued as strong performer
- Consumer discretionary reversed from strong performer in 2019 and 2020 to the worst in 2021

2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	Q1	Q2	Q3	Q4
Real Estate 31.45	Health Care 36.54	Health Care 18.73	Health Care 6.81	Energy 28.62	Info Tech 42.27	Utilities 2.23	Info Tech 47.52	Info Tech 46.13	Energy 37.49	Energy 18.03	Info Tech 10.61	Energy 3.11	Info Tech 12.65
Financials 29.44	Consumer Discretionary 36.49	Info Tech 15.73	Consumer Staples 5.69	Materials 24.16	Materials 30.19	Health Care 2.22	Consumer Discretionary 28.20	Consumer Discretionary 36.99	Info Tech 27.69	Financials 11.57	Energy 9.59	Financials 2.04	Utilities 10.35
Consumer Discretionary 24.05	Industrials 30.06	Utilities 14.68	Consumer Discretionary 4.59	Financials 13.06	Industrials 25.90	Info Tech -5.47	Industrials 27.14	Comm Services 24.10	Financials 25.11	Industrials 7.60	Health Care 9.50	Info Tech 0.60	Real Estate 9.09
Health Care 18.58	Info Tech 27.06	Real Estate 13.51	Info Tech 3.65	Info Tech 12.71	Consumer Discretionary 25.66	Real Estate -6.98	Comm Services 25.12	Materials 21.47	Real Estate 23.62	Comm Services 6.69	Real Estate 8.53	Health Care 0.31	Consumer Staples 8.42
Industrials 16.75	Comm Services 24.49	Consumer Staples 6.78	Real Estate 0.26	Industrials 12.55	Financials 24.75	Consumer Discretionary -7.97	Financials 24.07	Health Care 15.44	Health Care 18.01	Materials 6.48	Comm Services 8.11	Utilities -0.02	Materials 7.21
Info Tech 15.79	Financials 22.66	Consumer Discretionary 3.93	Comm Services -1.40	Utilities 6.58	Health Care 20.74	Consumer Staples -9.89	Real Estate 24.02	Industrials 11.76	Industrials 16.56	Real Estate 6.18	Financials 6.43	Real Estate -1.67	Health Care 6.80
Consumer Staples 15.30	Consumer Staples 19.14	Financials 3.93	Industrials -2.61	Comm Services 5.85	Real Estate 18.51	Comm Services -10.10	Health Care 23.31	Consumer Staples 8.83	Materials 15.27	Consumer Discretionary 2.33	Materials 6.13	Consumer Staples -2.02	Consumer Discretionary 6.10
Materials 11.50	Energy 14.27	Industrials 0.71	Financials -5.11	Consumer Discretionary 3.36	Consumer Staples 18.46	Energy -12.63	Consumer Staples 22.39	Utilities 4.64	Consumer Staples 11.71	Info Tech 1.86	Consumer Discretionary 5.98	Industrials -2.07	Industrials 5.56
Comm Services 9.08	Utilities 11.60	Comm Services -1.10	Utilities -7.43	Real Estate 3.16	Utilities 14.84	Industrials -13.96	Utilities 22.08	Financials -3.15	Utilities 10.96	Utilities 0.79	Consumer Staples 5.88	Comm Services -2.44	Financials 3.25
Utilities 3.36	Real Estate 1.71	Materials -7.08	Materials -15.78	Consumer Staples 2.13	Comm Services 8.61	Financials -15.16	Materials 20.72	Real Estate -5.67	Comm Services 10.82	Health Care 0.61	Industrials 4.79	Materials -4.85	Energy 3.10
Energy 3.08	Materials -0.27	Energy -12.92	Energy -21.61	Health Care -6.35	Energy 7.64	Materials -15.62	Energy 13.80	Energy -27.72	Consumer Discretionary 9.19	Consumer Staples -0.69	Utilities -0.21	Consumer Discretionary -5.11	Comm Services -1.51

Sources: LGIM America, Morningstar Direct.

Index providers and market update

In December, the United Arab Emirates announced it was moving from a Sunday-Thursday work week to a Monday-Friday one. As a result, the local exchanges: the Abu Dhabi Securities Exchange, Dubai Financial Market and NASDAQ Dubai all moved their trading days to align to the new work week which came into effect at the beginning of January 2022.

FTSE Russell

In December, following a consultation on the FTSE UK Index Series Eligibility criteria, FTSE announced some changes to this series. Changes include the lowering of the minimum free-float requirement for UK issuers from 25% to 10%. For non-UK issuers, this threshold was lowered from 50% to 25%. The FTSE 100 and FTSE All-Shares are headline indexes of this series.

MSCI

After the consultation result announcement in September, Pakistan was reclassified to Frontier status at the November review. MSCI cited that fact that Pakistan no longer met Size and Liquidity requirements.

Argentina was also reclassified at the November review – demoted from Emerging Markets status to Standalone status. As a result of these changes, the MSCI Emerging Markets index had 25 countries at the end of 2021.

MSCI have a number of market consultations which close in the first quarter of 2022. Topics include amendments to the Global Industry Classification Structure (GICS) and the regional classification of Israel.

S&P

The GICS classification consultation from MSCI is also hosted by S&P. According to S&P DJI and MSCI, highlights specific to the consultation include potential changes to the classification of renewable energy companies and retailers within the GICS framework. An announcement on the results is expected in March.

For further information, please contact [Greg Behar](#), Head of Index Strategy.

For educational purposes only. This is not a solicitation to purchase any product and is not intended as a solicitation to buy or sell any securities or other financial instruments or to provide any investment advice or service.

Index provider information has not been independently verified by LGIMA for its accuracy or completeness, therefore the information obtained from third party sources cannot be guaranteed. Accordingly, the information herein should not be relied on in making any investment decision, as an investment always carries with it the risk of loss and the vulnerability to changing economic, market or political conditions, including but not limited to changes in interest rates, issuer, credit and inflation risk, foreign exchange rates, securities prices, market indexes, operational or financial conditions of companies or other factors. Past performance should not be taken as an indication or guarantee of future performance and no representation, express or implied, is made regarding future performance or that LGIMA's investment or risk management process will be successful.

Hypothetical performance results have many inherent limitations and no representation is being made that any account will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program.

One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading. For example, the ability to withstand losses or to adhere to a particular trading program in spite of trading losses are material points which can also adversely affect actual trading results. There are numerous other factors related to the markets in general or to the implementation of any specific trading program which cannot be fully accounted for in the preparation of hypothetical performance results and all of which can adversely affect actual trading results.

The use of hypothetical performance is subject to inherent limitations derived from the reliance on historical data and the benefit of hindsight. All trading strategies applied to the analysis were available throughout the performance period. However, the analysis includes certain assumptions where actual performance could be different from the hypothetical performance presented.

A review of the ERI Scientific Beta index methodology has been conducted by: a) comparing in and out of sample performance of the hypothetical back-tested information provided by Scientific Beta; b) testing the returns against the intended factor biases; c) conducting a comparison of similar multi-factor indexes to Scientific Beta's multi-factor index; and d) reviewing the reasonability of portfolio characteristics. The output of the indexes appears reasonable given the methodology and targeted portfolio risk biases and opinions expressed herein are as presented and may change based on market and other conditions. The material contained here is confidential and intended for the person to whom it has been delivered and may not be reproduced or distributed. The material is for informational purposes only and is not intended as a solicitation to buy or sell any securities or other financial instrument or to provide any investment advice or service. Legal & General Investment Management America, Inc. does not guarantee the timeliness, sequence, accuracy or completeness of information included. Past performance should not be taken as an indication or guarantee of future performance and no representation, express or implied, is made regarding future performance.