Scientific Beta
An EDHEC-Risk Institute Venture

Smart Beta Performance Report

January 2014

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Introduction

Recent years have seen the development of numerous smart beta indices whose weighting schemes depart from those of cap-weighted indices. Smart beta indices may be obtained by tilting economic factors, such as book-to-market, size or volatility, or by introducing greater diversification into the index, as illustrated in multistrategy indices. The positive performance of smart beta indices over the long term has been largely documented in the literature. However, these indices are exposed to risk factors that differ from those of cap-weighted indices and that may cause variations in performance over short periods. As a result, the presentation of long-term performance is not enough for investors, who are also demanding performance figures over recent and shorter periods. The present report gives a complete picture of smart beta index performance with both long-term and short-term figures that illustrate the variations in performance over the different time periods, as well as the variations in performance between the various strategies. As a result, combining the various smart beta strategies makes it possible to obtain more robust performance.

Performance for smart beta indices exposed to risk factors known to be well rewarded over long periods remains strong with annual excess performance over broad cap-weighted indices ranging from 1.56% to 2.92% since inception for the Developed universe. In addition, the Value strategy provides the three best-performing indices over the long term. Over shorter periods, the strategies are exposed to fluctuations according to the variations in market conditions.

This month, the best performing index among smart factor indices is the Low Dividend Yield index with a relative return of 1.99%, closely followed by the Small Cap index with a relative return of 1.94%, while the High Dividend Yield index and the Large Cap index post the lowest relative returns (0.51% and 0.60% respectively). The Maximum Decorrelation index provides the best performance among the plain vanilla diversification schemes, with a relative return of 1.66%, while the Diversified Risk Weighting index records the lowest performance (0.87%). Over the latest one-year period, the best performing index was the SciBeta United Kingdom High-Momentum Maximum Decorrelation Index, with a relative return of 23.85% compared to cap-weighted.

1. Performance Overview for Smart Factor Indices for the Scientific Beta Developed Equity Universe and Long-Term US Indices

Tables 1a and 1b display the performance of diversified multistrategies. The six tilts selected – book-to-market, dividend yield, size, liquidity, volatility and momentum – are the common tilts documented in the literature as liable to produce outperformance compared to cap-weighted indices. The table presents performance statistics for both high and low stock selections by factor tilt. In addition, the table displays the performance of the index including all stocks. All these indices serve to create a diversified portfolio of the relevant stocks. In particular, they draw on different smart beta weighting schemes[1], which we refer to as a diversified multistrategy index. In addition, these indices offer investable proxies for smart beta factor indices. These indices allow investors to be both exposed to a specific risk factor (beta) and to have good diversification of other risk factors, leading to quite a good Sharpe ratio associated with the factor tilt. Table 1c displays the performance of long-term US indices based on the same factor selection and weighting scheme, the initial reference universe of these long-term US indices being the S&P 500 universe.

Table 1a: Short-Term Performance Overview for Smart Factor Indices for the Scientific Beta Developed Equity Universe

Diversified Multistrategy Index for	Past month (as of 31/01/2014)						Year-to-date (as of 31/01/2014)			
	Absolute Return		Relative Return compared to tilted cap-weighted		Relative Return compared to broad cap-weighted		Absolute Return		Relative Return compared to broad cap-weighted	
All Stocks	-2.43%		1.05%		1.25%		-2.43%		1.25%	
High/low stock selections by	High	Low	High	Low	High	Low	High	Low	High	Low
Book-to-market	-2.35%	-2.38%	1.54%	1.11%	1.33%	1.30%	-2.35%	-2.38%	1.33%	1.30%
Dividend Yield	-3.18%	-1.69%	0.96%	1.29%	0.51%	1.99%	-3.18%	-1.69%	0.51%	1.99%
Size	-3.08%	-1.74%	0.83%	0.63%	0.60%	1.94%	-3.08%	-1.74%	0.60%	1.94%
Liquidity	-2.86%	-2.12%	1.04%	0.67%	0.82%	1.57%	-2.86%	-2.12%	0.82%	1.57%
Volatility	-2.49%	-2.41%	1.00%	1.40%	1.19%	1.27%	-2.49%	-2.41%	1.19%	1.27%
Momentum	-2.48%	-2.63%	0.85%	1.42%	1.21%	1.05%	-2.48%	-2.43%	1.21%	1.05%

The history of Scientific Beta Index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. All results are in USD.

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[1] Maximum Deconcentration, Diversified Risk Weighted, Maximum Decorrelation, Efficient Max Sharpe, Efficient Minimum Volatility.

Table 1b: Long Term Performance Overview for Smart Factor Indices for the Scientific Beta Developed Equity Universe

Diversified Multistrategy Index for	Since Inception: from 21/06/2002 to 31/01/2014																
	Absolute Return		Relative Return compared to tilted cap-weighted		Relative Return compared to broad cap-weighted		Volatility		Sharpe Ratio		Maximum Relative Drawdown		Outperformance Probability (1Y)		Outperformance Probability (3Y)	
All Stocks	10.23%				2.21%		15.89%		0.55		4.07%		85.2%		100.0%	
High/low stock selections by	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Book-to-market	10.82%	9.53%	4.93%	1.70%	2.81%	1.61%	16.86%	15.16%	0.55	0.53	5.79%	6.08%	77.7%	69.5%	84.9%	86.9%
Dividend Yield	10.31%	9.89%	2.83%	4.52%	2.30%	1.88%	15.34%	16.49%	0.57	0.51	5.22%	8.32%	78.0%	73.5%	99.8%	94.9%
Size	9.56%	10.93%	2.41%	0.45%	1.56%	2.92%	16.04%	15.90%	0.50	0.59	3.58%	6.77%	86.3%	81.8%	99.3%	90.0%
Liquidity	9.77%	10.69%	2.27%	0.60%	1.76%	2.67%	16.94%	15.00%	0.49	0.61	4.37%	6.67%	78.2%	78.6%	97.6%	94.5%
Volatility	9.75%	10.48%	1.50%	3.49%	1.73%	2.47%	19.27%	13.61%	0.43	0.66	16.94%	9.20%	67.9%	64.7%	56.3%	94.5%
Momentum	10.64%	9.72%	1.85%	2.06%	2.62%	1.71%	15.57%	16.81%	0.59	0.49	12.00%	8.82%	77.3%	59.8%	82.7%	68.5%

The history of Scientific Beta Index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. The tilted cap-weighted indices are obtained based on the same selection of assets as each of the smart factor indices. All results are in USD.

Table 1c: Performance Overview for Long-Term US Indices

Diversified Multistrategy Index for	Long Term US Track Records since 1970 (as of 31/12/2012)					
	Relative Return compared to cap-weighted		Volatility		Sharpe Ratio	
All Stocks	2.31%		15.95%		0.46	
High/low stock selections by	High	Low	High	Low	High	Low
Book-to-market	2.17%	3.01%	15.93%	16.31%	0.45	0.49
Dividend Yield	3.50%	1.08%	14.79%	17.77%	0.57	0.34
Size	1.36%	4.14%	15.91%	16.41%	0.40	0.56
Liquidity	1.31%	3.94%	16.89%	15.27%	0.37	0.58
Volatility	2.13%	2.69%	19.17%	14.08%	0.37	0.55
Momentum	2.56%	2.23%	16.00%	16.52%	0.47	0.44

Long-Term US indices are style factor indices constructed from the S&P 500 Universe (according to CRSP). The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. The yield on Secondary Market US Treasury Bills (3M) is used as a proxy for the risk-free rate in US Dollars. All results are in USD.

Over the long term all diversified multistrategy indices exhibit a positive relative return compared to cap-weighted indices, whether they are broad or tilted cap-weighted indices. The highest performances relative to broad cap-weighted indices are posted by the small-cap index and the high book-to-market (value) index (2.92% and 2.81%, respectively), which is not surprising as value stock and small-cap stock premiums are largely documented in the literature. Tilted cap-weighted indices are factor indices that use the same universe of assets as each smart factor index. The outperformance of smart factor indices compared to those indices is due to the difference in weighting scheme, which results in better diversification for smart factor indices compared to cap-weighted indices. The gain in performance compared to tilted cap-weighted indices is higher for most of the smart factor indices compared to broad cap-

weighted indices. There are only two indices for which the gain in performance of the smart factor indices is quite low compared to tilted cap-weighted indices. Those indices are the only two cap-weighted indices that were clearly not concentrated in large capitalisation stocks, i.e. the small cap index and the low liquidity index.

Looking at year-to-date relative returns, which correspond this month to the past month's performance, we observe that all strategies post positive returns relative to cap-weighted, though all strategies have negative absolute returns. The best performing index among smart factor indices is the Low Dividend Yield index, with a relative return of 1.99%, closely followed by the Small Cap index with a relative return of 1.94%. In addition, the spread in relative return between the two smart factor indices, respectively resulting from high and low stock selections, greatly differs between the strategies, with some of them presenting a moderate spread, such as the book-to-market strategy, which exhibits the lowest one, with a relative return of 1.33% for the value index, compared to 1.30% for the growth index. The volatility and momentum strategies also exhibit a quite moderate spread year-to-date between high and low volatility selection stocks and between high and low momentum selection stocks. Other indices exhibit larger spreads in relative return between high and low selection stocks, like dividend yield indices, with a relative return of 0.51% for the high dividend yield index, compared to 1.99% for the low dividend yield index since the start of 2014. The size indices also present quite a large spread between high and low stock selection (0.60% and 1.94%, respectively) since the start of 2014.

Looking at market betas[2] for all these strategies, the link between the similarity of the high and low market betas and the spread of performance between high and low betas is not so clear. For example, the large-cap and small-cap indices both have market betas of 0.95 and a spread of 1.34% between high and low stock selections. Conversely, the largest difference in beta is observed for volatility indices, with market betas of 1.12 and 0.83 for high and low indices respectively, while the spread between the performance of the two indices is only 0.08% for the past month.

Looking at the performance of the All Stocks Diversified Multi-strategy index, it appears that investing in this index smoothes the variations in performance observed among the smart factor indices, which leads to more robust performance. The performance is obtained with lower variations in short-term performance compared to smart factor indices, as shown by its maximum relative drawdown, which is very low compared to the smart factor indices displayed in table 1.

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[2] All beta values are from www.scientificbeta.com.

2. Performance Overview for Plain Vanilla Diversification Schemes for the Scientific Beta Developed Equity Universe and Long-Term US Indices

Table 2 displays the performance of indices using the various diversification schemes that have been identified as alternatives to the cap-weighted scheme that is known to generate indices that are concentrated in a limited number of stocks. In addition, the tables display the performance of the diversified multi-strategy index including all stocks, as well as the performance of long-term US indices based on the same stock selection and weighting scheme.

Table2a: Short-Term Performance Overview for Plain Vanilla Diversification Schemes for the Scientific Beta Developed Equity Universe

Weighting scheme	Past month (as of 31/01/2014)		Year-to-date (as of 31/01/2014)	
	Absolute return	Relative Return compared to broad cap-weighted	Absolute return	Relative Return compared to broad cap-weighted
Maximum Deconcentration	-2.72%	0.97%	-2.72%	0.97%
Diversified Risk Weighting	-2.82%	0.87%	-2.82%	0.87%
Maximum Decorrelation	-2.02%	1.66%	-2.02%	1.66%
Efficient Max. Sharpe	-2.33%	1.35%	-2.33%	1.35%
Efficient Minimum Volatility	-2.26%	1.43%	-2.26%	1.43%
Diversified Multistrategy	-2.43%	1.25%	-2.43%	1.25%

The history of Scientific Beta index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. All results are in USD.

Table2b: Long-Term Performance Overview for Plain Vanilla Diversification Schemes for the Scientific Beta Developed Equity Universe

Weighting scheme	Since Inception : from 21/06/2002 to 31/01/2014								
	Absolute Return	Relative Return compared to broad cap-weighted	Volatility	Sharpe Ratio	Maximum Relative Drawdown	Outperformance Probability (1Y)	Outperformance Probability (3Y)	Turnover	Capacity
Maximum Deconcentration	9.94%	1.92%	17.43%	0.48	9.49%	71.9%	88.2%	28.8%	17157
Diversified Risk Weighting	10.09%	2.07%	16.53%	0.52	6.48%	83.4%	94.7%	28.7%	18129
Maximum Decorrelation	10.12%	2.10%	16.14%	0.53	4.03%	78.0%	99.6%	32.5%	17444
Efficient Max. Sharpe	10.24%	2.22%	15.52%	0.56	4.04%	86.7%	100.0%	32.1%	18327
Efficient Minimum Volatility	10.67%	2.65%	14.02%	0.66	8.14%	73.9%	99.3%	30.9%	20649
Diversified Multistrategy	10.23%	2.21%	15.89%	0.55	4.07%	85.2%	100.0%	25.9%	18341

The history of Scientific Beta index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. The table shows the turnover level of the index in % and the average capacity of the index as measured by the average market capitalisation in M$, as of 20/12/2013. All results are in USD.

Table2c: Performance Overview for Long-Term US Indices

Weighting scheme	Long Term US Track Records since 1970 (as of 31/12/2012)		
	Relative Return	Volatility	Sharpe ratio
Maximum Deconcentration	2.18%	17.13%	0.42
Diversified Risk Parity	2.25%	16.45%	0.44
Maximum Decorrelation	2.22%	16.34%	0.44
Efficient Max. Sharpe	2.53%	15.67%	0.48
Efficient Minimum Volatility	2.28%	14.42%	0.50
Diversified Multistrategy	2.31%	15.95%	0.46

Long Term US indices are based on the S&P 500 Universe (according to CRSP). The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised and performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. The yield on Secondary Market US Treasury Bills (3M) is used as a proxy for the risk-free rate in US Dollars. All results are in USD.

Since inception in 2002, all diversification schemes post positive relative returns. In terms of risk-adjusted performance, the best performance is delivered by the Efficient Minimum Volatility index, with a Sharpe ratio of 0.66. In terms of probability of outperformance for a one-year holding period, the best strategy appears to be the Efficient Max Sharpe strategy with a probability of 86.7%. The performance of all strategy indices since inception in the Developed Markets universe is quite comparable to the long-term US track record.

Year-to-date, which is similar this month to the past month's performance, all strategies delivered positive returns relative to cap-weighted, though all of them posted negative absolute returns. The best performing strategy was the Maximum Decorrelation strategy (1.66%), while the worst performing strategy is the Diversified Risk Weighting strategy (0.87%). The Diversified Multistrategy index allows these extremes to be avoided by diversifying across the five weighting schemes and posts year-to-date return of 1.25%. Since inception in 2002, the Diversified Multistrategy index also has the lowest turnover. It appears that investing in the Diversified Multistrategy index cancels out some of the transactions occurring in the single strategies. The turnover is only 25.9% per year. The low maximum relative drawdown of the Diversified Multistrategy index shows that combining several strategies leads to more robust performance over the long term.

3. Best and Worst Performing Indices for All Regions

In this section, we focus on the performance of the best and worst performers among the 2,958 Scientific Beta indices. Tables 3a and 3b display the top three indices and the bottom three indices, since inception and over the latest one-year period respectively. In addition, we provide the median performance statistic values for the period since inception.

Table 3a: Best and Worst Performing Indices since Inception on 21/06/2002 (all regions – 2,958 indices)

Best performers since inception (top 3 indices by relative return as of 31/01/2014)	Relative return	Outperformance probability			Relative bull/bear market performance		Relative high/low volatility performance		Maximum relative drawdown
		1 year	3 year	5 year	Bull	Bear	High volatility	Low volatility	
SciBeta Developed Asia-Pacific ex-Japan High-Momentum Efficient Minimum Volatility	8.69%	81.3%	92.9%	98.8%	4.59%	12.30%	10.48%	5.56%	18.32%
SciBeta Developed Asia-Pacific ex-Japan High-Momentum Maximum Decorrelation	8.59%	85.0%	99.1%	100.0%	8.99%	6.33%	5.74%	12.00%	13.59%
SciBeta Developed Asia-Pacific ex-Japan Value Maximum Decorrelation (Sector Neutral)	8.34%	68.6%	88.5%	96.8%	12.28%	2.24%	2.90%	16.06%	16.74%
Worst performers since inception (bottom 3 indices by relative return as of 31/01/2014)	Relative return	Outperformance probability			Relative bull/bear market performance		Relative high/low volatility performance		Maximum relative drawdown
		1 year	3 year	5 year	Bull	Bear	High volatility	Low volatility	
SciBeta Developed Asia-Pacific ex-Japan HLiq Growth Maximum Decorrelation	-2.13%	27.7%	9.1%	8.9%	-6.87%	3.70%	-0.93%	-4.19%	35.34%
SciBeta Developed Asia-Pacific ex-Japan HLiq Growth Maximum Deconcentration (Country Neutral)	-1.96%	30.3%	16.6%	12.4%	-1.66%	-2.21%	-4.14%	1.06%	33.07%
SciBeta Developed Asia-Pacific ex-Japan HLiq Growth Maximum Deconcentration	-1.93%	24.5%	9.3%	9.2%	-3.78%	0.23%	-2.35%	-1.67%	32.99%
	Relative return	Outperformance probability			Relative bull/bear market performance		Relative high/low volatility performance		Maximum relative drawdown
		1 year	3 year	5 year	Bull	Bear	High volatility	Low volatility	
Median performance statistics since inception as of 31/01/2014	1.90%	66.8%	76.3%	92.2%	1.17%	2.42%	1.47%	2.09%	12.26%

The history of Scientific Beta index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised, except bull and bear market performances and high and low volatility market performances, which are quarterly values. Performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. All results are in USD.

The top three indices based on the relative returns since inception are all from the Developed Asia-Pacific ex-Japan region. The first two are High Momentum indices and the third one is a Value index. While both the value and momentum premia have been largely documented in the literature, the value premium is considered a long term effect, while the momentum premium is described as a short-term phenomenon. In addition, these indices use two weighting schemes –Maximum Decorrelation and Efficient Minimum Volatility– that take into account the correlations between stock returns.

The bottom three indices based on the relative returns since inception are all High-Liquidity Growth indices. Since Value indices are found in the winner group, it is not surprising to find Growth indices in the bottom group. Two of the three indices exhibit similar conditional return profiles, namely negative

returns during bull markets, and during both high and low volatility markets. The third one posted negative returns during both bull and bear markets, and during high volatility markets, but positive returns during low volatility markets. The main differing characteristic of this index compared to the other two is that of being country neutral. These three indices are from the Developed Asia-Pacific ex-Japan region, like the top three indices, which shows that the best or worst performer status of these indices is first of all related to the strategy chosen (Value or High Momentum, rather than Growth), rather than to the geographic selection.

Table 3b: Best and Worst Performing Indices over the Latest One-Year Period (all regions – 2,958 indices)

Best performers over one year (top 3 indices by relative return as of 31/01/2014)	Relative return	Outperformance probability			Relative bull/bear market performance		Relative high/low volatility performance		Maximum relative drawdown
		1 year	3 year	5 year	Bull	Bear	High volatility	Low volatility	
SciBeta United Kingdom High-Momentum Maximum Decorrelation	23.85%	71.9%	73.6%	78.4%	2.43%	4.21%	-0.39%	7.92%	2.52%
SciBeta United Kingdom High-Momentum Efficient Maximum Sharpe Ratio	21.07%	79.8%	88.2%	95.4%	1.94%	7.23%	1.44%	7.55%	2.74%
SciBeta United Kingdom HLiq High-Momentum Maximum Decorrelation	20.26%	72.6%	80.5%	93.9%	2.10%	6.51%	1.77%	6.69%	1.95%
Worst performers over one year (bottom 3 indices by relative return as of 31/01/2014)	Relative return	Outperformance probability			Relative bull/bear market performance		Relative high/low volatility performance		Maximum relative drawdown
		1 year	3 year	5 year	Bull	Bear	High volatility	Low volatility	
SciBeta Developed Asia-Pacific ex-Japan HLiq Value Efficient Minimum Volatility (Sector Neutral)	-8.29%	65.4%	80.5%	91.9%	5.93%	3.12%	3.49%	7.09%	8.61%
SciBeta Eurozone Low-Momentum Efficient Minimum Volatility (Sector Neutral)	-7.95%	51.7%	54.1%	53.9%	-1.04%	0.69%	0.63%	-1.40%	9.02%
SciBeta Developed Asia-Pacific ex-Japan Low-Momentum Maximum Deconcentration (Country Neutral)	-7.17%	34.6%	44.3%	21.3%	-0.06%	-1.74%	-2.29%	1.16%	9.07%

The history of Scientific Beta index returns begins on 21/06/2002. The statistics are based on daily total returns (with dividend reinvested). All statistics are annualised, except bull and bear market performances and high and low volatility market performances, which are quarterly values. Performance ratios that involve the average returns are based on the geometric average, which reliably reflects multiple holding period returns for investors. ERI Scientific Beta uses the yield on Secondary Market US Treasury Bills (3M) as a proxy for the risk-free rate in US Dollars. All results are in USD.

Over one year ending 31/01/2014, the top three indices are all United Kingdom and High Momentum indices. The dominance of High Momentum indices over a one-year period is not surprising, as the momentum effect was described in the literature as a short-term phenomenon that holds over time periods of one quarter to one year. Looking at the Carhart performance attribution[3] for the three indices, it appears that the market factor explains less than 8% of their performance (7.45%, 7.4 3% and 7.60%, respectively). Size factors have a contribution to the performance of between 3% and 4%. The value factor has a weaker contribution of around 1%. Not surprisingly, the momentum factor contribution to the performance of all these indices is quite important, with about the same percentage as the market factor (7.68%, 6.47% and 7.39%, respectively. In terms of sector contribution, the sector effect is positive for all of them, and ranges from 5.76% to 7.01%.

The bottom three indices share similar characteristics two by two, as two indices are Asia-Pacific ex-Japan indices, two of them are Efficient Minimum Volatility indices and two of them are Low Momentum indices. Minimum Volatility indices are indices that perform especially well during bear markets and

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[3] Carhart factor analysis and sector performance attribution results are available on www.scientificbeta.com.

that encounter negative performances relative to cap-weighted indices during bull markets. Since High Momentum indices were in the top performers over the latest year, it is not surprising to find Low Momentum indices among the bottom indices. Looking at the Carhart performance attribution, it appears that the three indices have different performance profiles. The market factor has a negative contribution for the two Asia-Pacific ex-Japan indices (-1.74% and -1.89%), while it contributes positively for the Eurozone index. The size factor has a positive, but very low, contribution for the three indices (between 0.15% and 0.51%). The value factor has a negative contribution for the two indices that use the Efficient Minimum Volatility strategy - SciBeta Developed Asia-Pacific ex-Japan HLiq Value Efficient Minimum Volatility (Sector Neutral) and SciBeta Eurozone Low-Momentum Efficient Minimum Volatility (Sector Neutral) -, while its contribution is positive for the index that uses the Maximum Deconcentration strategy - SciBeta Developed Asia-Pacific ex-Japan Low-Momentum Maximum Deconcentration (Country Neutral). Finally the momentum factor has a negative contribution for the two Low Momentum indices, while its contribution is positive but not significant for the Value index. In terms of sector contribution, the sector effect is positive for the two Momentum indices, and negative for the Value index.

About ERI Scientific Beta

ERI Scientific Beta aims to be the first provider of a smart beta platform to help investors understand and invest in advanced beta equity strategies. It has three principles:

Choice: A multitude of strategies are available allowing users to build their own benchmark, choosing the risks to which they wish, or do not wish, to be exposed. This approach, which makes investors responsible for their own risk choices, referred to as Smart Beta 2.0, is the core component of the index offerings proposed by ERI Scientific Beta.

Transparency: The rules for all of the Scientific Beta series are replicable and transparent.

Clarity: Exhaustive explanations of construction methodologies are provided, as well as detailed performance and risk analytics.

Established by EDHEC-Risk Institute, one of the very top academic institutions in the field of fundamental and applied research for the investment industry, ERI Scientific Beta shares the same concern for scientific rigour and veracity, which it applies to all the services that it offers investors and asset managers.

Part of EDHEC Business School, a not-for-profit organisation, EDHEC-Risk Institute has sought to provide the ERI Scientific Beta services in the best possible economic conditions. As such, ERI Scientific Beta's business model also allows free access to a series of indices.

The ERI Scientific Beta offering covers three major services:

Scientific Beta Indices: Scientific Beta Indices are smart beta indices that aim to be the reference for the investment and analysis of alternative beta strategies. Scientific Beta Indices reflect the state-of-the-art in the construction of different alternative beta strategies and allow for a flexible choice among a wide range of options at each stage of their construction process. This choice enables users of the platform to construct their own benchmark, thus controlling the risks of investing in this new type of beta (Smart Beta 2.0). The Scientific Beta platform offers 2,958 smart beta indices.

Scientific Beta Analytics: Scientific Beta Analytics are detailed analytics and exhaustive information on smart beta indices to allow investors to evaluate the advanced beta strategies in terms of risk and performance. The analytics capabilities include risk and performance assessments, factor and sector attribution, and relative risk assessment. We believe that it is important for investors to be able to conduct their own analyses, select their preferred time period and choose among a wide range of analytics in order to produce their own picture of strategy performance and risk.

Scientific Beta Fully-Customised Benchmarks: The Scientific Beta Fully-Customised Benchmarks service enables investors and asset managers to benefit from its expertise and the ability to determine and implement their choice of stocks, weighting schemes, and absolute and relative risk constraints in keeping with their objectives.

With a concern to provide worldwide client servicing, ERI Scientific Beta is organising the presence of its teams in Boston, London, Nice, Singapore and Tokyo.

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