

# MSCI FACTOR INDEXES

## ADDING TO THE INVESTMENT TOOL KIT

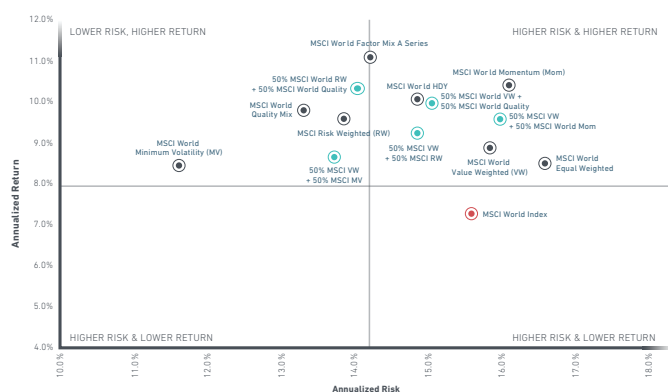
Traditionally, portfolio returns were attributed to passive market exposure (the equity risk premium) captured through cap weighted indexes and active portfolio management. More recently, however, investors have realized that many return components that were once considered added value (alpha) can be attributed to sources of systematic return (style and strategy factors) such as value, size, volatility, quality, or momentum. Today, an array of systematic return components are widely accepted as Factor Indexes (enhanced or alternative beta).

The MSCI Factor Indexes seek to reflect the performance characteristics of a range of investment styles and strategies using transparent and rules-based methodologies. Each MSCI Factor Index is derived from the equity universe of a traditional market cap weighted MSCI “parent index”.

### FACTOR INDEXES IN THE ASSET ALLOCATION PROCESS

A factor-based approach to asset allocation is an emerging trend among institutional investors.

### HISTORICAL PERFORMANCE OF MSCI FACTOR INDEXES (DEC 1988 — DEC 2013)<sup>1</sup>



While asset allocation has traditionally been based on asset class groupings—typically equities, bonds and alternatives—the new framework is based on risk groupings such as growth, income, inflation, volatility, and liquidity. To the extent that institutional asset allocation processes gradually shift from asset classes to risk groupings, a shift from emphasizing diversification across managers in multiple alpha mandates to diversification across strategy betas in multiple index mandates may occur.

### PERFORMANCE CHARACTERISTICS

Over a 24-year period (1988–2013), many factor indexes derived from the MSCI World parent index, generated positive risk-adjusted returns and higher Sharpe ratios than the parent. However, year-to-year, these returns show cyclicity—with periods of underperformance that can last several years.

Diversifying across factors can help to carry a portfolio through the periods of underperformance that may occur for any single strategy. The chart above, for example, illustrates that over the period 1988–2013, a combination of a risk weighted with a quality strategy delivered a 3.1% annualized return increase over the MSCI World Index with a significantly lower level of risk.

<sup>1</sup> Over the period 1988–2013 the cap weighted MSCI World Index in the lower right quadrant produced an annualized return of 7.3% with an annualized volatility of 15.3%. In comparison, MSCI Factor indexes (and combinations) generated higher risk adjusted returns. The MSCI World Quality Index, for example, generated the highest risk adjusted return over the period with an annualized return of 11.2% and an annualized volatility of 14.0%. The MSCI World Minimum Volatility Index produced a return of 8.5% with a much reduced volatility of 11.5%.

## HIGHLIGHTS OF EACH FACTOR INDEX SERIES

	FEATURES	METHODOLOGY
<b>MSCI RISK WEIGHTED INDEXES</b>	<ul style="list-style-type: none"> <li>• Seek to emphasize stocks with lower historical return variance; tend to have a bias towards lower size and lower risk stocks</li> <li>• Have historically exhibited lower realized volatility relative to the MSCI parent index, while maintaining reasonable liquidity and capacity</li> </ul>	Each constituent of an MSCI parent index is given a risk weighting, using the inverse of its historical variance based on three years of weekly security-level returns data.
<b>MSCI MINIMUM VOLATILITY INDEXES</b>	<ul style="list-style-type: none"> <li>• Seek to capture the performance characteristics of a minimum variance strategy by optimizing a cap weighted MSCI parent index</li> <li>• Have historically shown lower realized volatility and lower beta relative to the MSCI parent index, with a bias towards smaller, less volatile stocks and towards stocks with lower idiosyncratic risks</li> </ul>	Each MSCI Minimum Volatility Index targets the lowest return variance for a given covariance matrix of stock returns, applying constraints to maintain index investability and replicability. Constraints include maximum security weights, and active country, sector and volatility factor limits versus the parent index.
<b>MSCI GDP WEIGHTED INDEXES</b>	<ul style="list-style-type: none"> <li>• Regional indexes that seek to reflect the size of each country's economy (its GDP) rather than the size of its equity market as represented by the MSCI parent indexes</li> <li>• Tend to tilt the indexes towards countries with relatively higher nominal GDP</li> </ul>	Each country in an MSCI GDP Weighted Index is weighted based on the previous year's GDP data. Country weights are reset annually in May. Thereafter, the country weights fluctuate with changes in performance and market capitalization in the parent indexes until the next rebalancing.
<b>MSCI HIGH DIVIDEND YIELD INDEXES</b>	<ul style="list-style-type: none"> <li>• Seek to target companies with high dividend yields and a record of sustainable and persistent dividend payments</li> <li>• Capture the performance of high dividend-yielding stocks while maintaining index turnover characteristics similar to the parent index</li> </ul>	Each MSCI High Dividend Yield (HDY) Index includes only the constituents of the parent index that have higher than average dividend yields, track records of consistent dividend payments, and a capacity to sustain dividend payouts into the future. In addition, each index excludes potentially underperforming securities based on "quality" factors such as return on equity (ROE), earnings variability, debt to equity (D/E), and recent 12 month price performance. Issuer weights are capped to mitigate concentration risk. <sup>1</sup>
<b>MSCI VALUE WEIGHTED INDEXES</b>	<ul style="list-style-type: none"> <li>• Seek to overweight stocks with value characteristics and lower valuations relative to the parent index</li> <li>• Offer a value tilt, while maintaining trading liquidity, investment capacity and turnover characteristics similar to the parent index</li> </ul>	Each constituent of an MSCI parent index is weighted on four fundamental accounting variables: sales, earnings, cash earnings and book value.
<b>MSCI EQUAL WEIGHTED INDEXES</b>	<ul style="list-style-type: none"> <li>• Seek to remove the influence of market prices from an MSCI parent index at each quarterly rebalance</li> <li>• Tend to overweight smaller cap index constituents relative to the parent index and are considered one approach to capturing the small cap premium</li> </ul>	Each index constituent is weighted equally at each rebalance date, effectively removing the influence of that constituent's price (high or low) from the index on the rebalance date.

<sup>1</sup> Additional quality screens were implemented as of June, 2013

## FEATURES

## METHODOLOGY

### MSCI QUALITY INDEXES

- Seek to reflect a quality growth investment strategy by targeting stocks with historically high return on equity (ROE), stable year-over-year earnings growth and low financial leverage
- Capture growth and low leverage factors

A quality score is determined for each stock in the MSCI parent index based on the three fundamental variables shown above.

A fixed number of securities with the highest quality scores are included in each MSCI Quality Index, covering 30%–40% of the parent index universe. Constituents are weighted by the product of their quality score and their market cap. Constituent weights for broad MSCI Quality Indexes are capped at 5%. The indexes are rebalanced semi-annually.

### MSCI MOMENTUM INDEXES

- Seek to reflect the performance of an equity momentum strategy by emphasizing stocks with high risk-adjusted price momentum
- Capture the momentum factor, while maintaining reasonably high capacity and liquidity, with moderate index turnover

A momentum value is determined for each stock in the MSCI parent index by combining the stock's recent 12-month and 6-month local price performance. This momentum value is then risk-adjusted to determine the stock's momentum score. A fixed number of securities with the highest momentum scores are included in each MSCI Momentum Index, generally covering about 30% of the parent index market cap. Constituents are weighted by the product of their momentum score and their market cap. Constituent weights for broad MSCI Momentum Indexes are capped at 5%. The indexes are rebalanced semi-annually; in addition, ad hoc rebalancing may occur, triggered by spikes in market volatility.

### MSCI RISK CONTROL INDEXES

- Target a specific level of risk by dynamically varying the weights of an MSCI parent index and a cash component, subject to a maximum leverage of 150%
- Provide four different target risk levels: 10%, 12.5%, 15%, and 17.5%

To estimate the volatility of an MSCI parent index (in a specific base currency) both its short-term and long term volatility trends are used. Leverage in the MSCI Risk Control Indexes is subject to a maximum of 150% (plus turnover buffers) and is calculated daily as the ratio of the specific risk level and the parent index. The MSCI Risk Control Indexes are rebalanced daily, and are rebalanced only when the percentage change in daily index leverage exceeds 5% (the turnover buffer). Two index levels are calculated: total returns representing the weighted return of the MSCI parent index and the cash component; and, excess returns representing total returns minus the returns of the cash component.

### MSCI FACTOR MIX A SERIES INDEXES

- Seek to represent the performance of quality, value and low volatility multi-factor strategies across global equity markets
- Combine the MSCI Quality, MSCI Value Weighted and MSCI Minimum Volatility Indexes in one diversified factor index

Each MSCI Factor Mix A Series Index is constructed as a combination of three MSCI Factor Index components: an MSCI Quality, an MSCI Value Weighted and an MSCI Minimum Volatility Index. Each of the three component indexes in an MSCI Factor Mix A Series Index is equally weighted at each semi-annual rebalancing. All constituents of each component index are included in the MSCI Factor Mix A Series Index. At any given time, the weight of each security in the MSCI Factor Mix A Series Index is based on its weight in each underlying component index, and on the weight of each component index in the MSCI Factor Mix A Series Index.

## FEATURES

## METHODOLOGY

### MSCI FACTOR TILT INDEXES

- Aim to reflect the performance of specific factors such as Quality, Momentum and Volatility
- No pre-selection from the parent universe leads to enhanced investability and high investment capacity
- Designed for institutional investors for whom investability is a critical consideration, such as large-scale asset owners and managers

Each MSCI Factor Tilt Index is created by tilting the market capitalization weights of all the constituents in the parent index based on the relevant factor score and then re-weighting them.

### MSCI BARRA<sup>®</sup> FACTOR INDEXES (LONG-SHORT AND LONG-ONLY)

- Optimize an MSCI parent index to capture relatively high exposure to a target factor (e.g., value, earnings yield, momentum, low volatility, low leverage) with relatively low exposure to all other non-target factors
- Aim to achieve similar performance to the parent index plus the target factor, maintaining index investability and replicability and minimizing tracking error relative to the parent
- Available in 130/30 long/short and long only versions

Target factor exposure is set to 1 standard deviation above the parent index; all non-target factor exposures are limited to  $\pm 0.1$  standard deviations from the parent index. Investability constraints are applied to minimize trading/shorting costs, limit stock specific risk and maintain low turnover and tracking error relative to the parent index. The indexes are rebalanced monthly.

### MSCI MARKET NEUTRAL BARRA<sup>®</sup> FACTOR INDEXES

- Aim to capture systematic returns associated with a single "target" style factor (e.g., momentum or volatility) while maintaining minimum exposure to industry, country and other style factors
- Seek to reflect the performance of a market neutral strategy, which has historically exhibited low correlation with the performance of the parent index

The indexes are constructed by optimizing an MSCI parent index to achieve a high, stable level of exposure to a single target factor and low exposure to all other factors, while remaining investable, replicable and with moderate index turnover. Each index is composed of long and short stocks, with gross leverage of 2 (100% long and 100% short) and aims to achieve a unit standard deviation of exposure to the target factor. The indexes are rebalanced monthly with several constraints. Non-target style factor exposures are limited to  $\pm 0.1$  standard deviation, while industry and country weights are limited to  $\pm 3\%$ . Each index is comprised of a maximum of 300 constituents, with a maximum constituent weight of  $\pm 3\%$ . One-way turnover is limited to 10% (5% for long constituents and 5% for short constituents) at each rebalancing. There is a shorting cost threshold of 100bps, and trade limits for each constituent are set using its Average Daily Traded Value.

## ABOUT MSCI

For more than 40 years, MSCI's research-based indexes and analytics have helped the world's leading investors build and manage better portfolios. Clients rely on our offerings for deeper insights into the drivers of performance and risk in their portfolios, broad asset class coverage and innovative research. Our line of products and services includes indexes, analytical models, data, real estate benchmarks and ESG research. MSCI serves 97 of the top 100 largest money managers, according to the most recent P&I ranking. For more information, visit us at [www.msci.com](http://www.msci.com).

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