THE MSCI MOMENTUM INDEXES

WHY DO INVESTORS USE MOMENTUM STRATEGIES?

- Numerous academic studies suggest that portfolios tilted towards stocks with high momentum have outperformed market cap weighted indexes over the long run. However, momentum portfolios resulting from empirical studies are often difficult to replicate due to illiquidity of constituents and high turnover.
- Momentum strategies tend to outperform in upward trending markets, making them good complements to value or low volatility strategies.

KEY BENEFITS OF THE MSCI MOMENTUM INDEXES

- Strong theoretical and empirical foundations
- Simple and transparent index methodology
- Low correlation with other MSCI Factor Indexes
- Moderate annual index turnover to reduce replication cost
- High investability and replicability
- Seamless integration with MSCI index-based portfolios

MSCI WORLD MOMENTUM INDEX RELATIVE TO MSCI WORLD INDEX

<table>
<thead>
<tr>
<th>Year</th>
<th>MSCI World</th>
<th>MSCI World Momentum</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>9.67%</td>
<td>12.3%</td>
</tr>
<tr>
<td>1994</td>
<td>15.0%</td>
<td>16.0%</td>
</tr>
<tr>
<td>1995</td>
<td>0.65%</td>
<td>0.77%</td>
</tr>
<tr>
<td>1996</td>
<td>N/A</td>
<td>2.59%</td>
</tr>
<tr>
<td>1997</td>
<td>N/A</td>
<td>8.68%</td>
</tr>
<tr>
<td>1998</td>
<td>N/A</td>
<td>0.30%</td>
</tr>
</tbody>
</table>

* Annualized from May 1973 to May 2015

ACTIVE FACTOR EXPOSURES OF THE MSCI WORLD MOMENTUM INDEX

- Size
- Volatility
- Growth
- Momentum
- Liquidity
- Value
- Leverage
- Size Nonlinearity

- 2.0
- 1.5
- 1.0
- 0.5
- 0.0
- -0.5
- -1.0
- Current
- Average
ILLUSTRATIVE USE CASE

• A US pension fund was seeking systematic exposure to the value, low size, quality and momentum factors
• The fund decided to combine the MSCI USA Risk Weighted, MSCI USA Quality, MSCI USA Value Weighted and MSCI USA Momentum Indexes in an equal weight allocation

COMBINING MSCI FACTOR INDEXES

• Momentum, value and low volatility have outperformed over long horizons. However, the performance of these strategies is cyclical; any factor can underperform for long time periods
• A portfolio based on combining MSCI Momentum Indexes with MSCI Value Weighted and MSCI Minimum Volatility Indexes created diversification benefits, which were particularly significant during volatile market conditions
• Combining MSCI Factor Indexes in a single custom index may reduce turnover by exploiting natural internal “crossing” opportunities at each rebalancing
• In addition, the plan will tactically overweight or underweight the various factors based on its macroeconomic and market views

COMBINING MSCI MOMENTUM AND MSCI VALUE WEIGHTED INDEXES (USD)

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