Asset owners and asset managers are increasingly interested in so-called “smart beta” indexes, a category that includes factor and alternatively weighted indexes. In a series of four FTSE Russell Insights, we explore the concept of factors in depth. We examine the differences between factor indexes and other types of smart beta index, illustrate how factor exposure is embedded in an index and suggest how factors can be combined most effectively.

In this Insights, the second of the series, we explore the differences between alternatively weighted and factor indexes.

**Categorization of smart beta**

Smart beta is a term that covers a wide range of systematic, index-based investment strategies in the equity markets and, increasingly, in other asset classes. Smart beta indexes depart from the standard index construction methodology of weighting constituents by their market value (capitalisation).

FTSE Russell distinguishes two types of indexes:

- Alternatively weighted indexes, designed to achieve specific index level objectives such as greater levels of diversification or lower levels of volatility;
- Factor indexes, designed to reflect the performance of factor risk premia in a transparent, rules-based and replicable format.
Types of Smart Beta Indexes

<table>
<thead>
<tr>
<th>Smart Beta</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternatively Weighted</td>
<td>Value</td>
</tr>
<tr>
<td>Equal Weight</td>
<td>Size</td>
</tr>
<tr>
<td>Minimum Variance</td>
<td>Momentum</td>
</tr>
<tr>
<td>Equal Risk Contribution</td>
<td>Low Volatility</td>
</tr>
<tr>
<td>Max. Diversification</td>
<td>Illiquidity</td>
</tr>
<tr>
<td>Max. Sharpe Ratio</td>
<td>Quality</td>
</tr>
<tr>
<td>Fundamental</td>
<td>Yield</td>
</tr>
</tbody>
</table>

Source: FTSE Russell

Interest in smart beta driven by both risk and return considerations

The 2014 and 2015 FTSE Russell Smart Beta surveys reveal that interest in smart beta amongst asset owners has been driven both by risk considerations (such as a wish to reduce index-level risk or to improve levels of index diversification) and a desire to enhance return through exposure to factor risk premia.

Smart Beta Index Interest is both Risk-Aware and Return-Aware

Source: FTSE Russell, Russell Smart Beta Survey 2014. Asset owners who declared themselves as currently evaluating smart beta, having evaluated and decided not to implement, or having a smart beta allocation, were asked: “What investment objective initiated your evaluation of smart beta strategies?”.
Factor exposure in alternatively weighted indexes

Alternatively weighted indexes also display factor exposures.

For example, a simple alternative weighting approach is to weight stocks in an index equally, rather than according to their market capitalization. This equal weighting approach can be measured as exposure to the size, momentum, quality, value, volatility and illiquidity factors (see the table below).

**Average Factor Exposure – Equally Weighted Index**

<table>
<thead>
<tr>
<th>Average factor exposure</th>
<th>Illiquidity</th>
<th>12-month momentum</th>
<th>Quality</th>
<th>Size</th>
<th>Value</th>
<th>(Low) volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE Developed Equally Weighted Index</td>
<td>1.21</td>
<td>-0.07</td>
<td>-0.01</td>
<td>1.42</td>
<td>0.08</td>
<td>-0.28</td>
</tr>
</tbody>
</table>

Source: FTSE Russell, data as at July 31 2015 FTSE Developed and FTSE Developed Equally Weighted indexes, September 2001–July 2015. The equally weighted index is rebalanced quarterly. Factor exposure is the average monthly exposure. *Past performance is no guarantee of future results. Please see the disclaimer for important legal disclosures.*

An equally weighted index has an underweight position in large-capitalization stocks, leading to a positive exposure to the size factor. Since larger stocks tend to be more liquid, a tilt towards small capitalization stocks results in a positive exposure to the illiquidity factor. And smaller stocks tend to be volatile, causing higher observed levels of volatility (i.e., negative exposure to the low volatility factor).

Another example of factor exposures can be seen in fundamental indexes, which weight companies according to their economic footprint, rather than their market capitalization. For example, the FTSE RAFI indexes are constructed using four fundamental measures of companies’ size: sales, cash flow, book value and dividends.

As companies’ fundamental size is correlated with their market capitalisation, fundamental indexes tend to have similar size and liquidity characteristics as a capitalisation-weighted index, resulting in negligible exposure to the illiquidity and size factors (see the table below).

**Average Factor Exposure – Fundamental Index**

<table>
<thead>
<tr>
<th>Average factor exposure</th>
<th>Illiquidity</th>
<th>12-month momentum</th>
<th>Quality</th>
<th>Size</th>
<th>Value</th>
<th>(Low) volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE RAFI Developed 1000</td>
<td>-0.03</td>
<td>-0.11</td>
<td>-0.19</td>
<td>-0.06</td>
<td>0.32</td>
<td>-0.08</td>
</tr>
</tbody>
</table>

However, fundamental indexes do have a value orientation. As value stocks are frequently out of favour, they also tend to display negative exposure to momentum. And as quality stocks tend to be expensive, a fundamental index typically has negative exposure to the quality factor.

Risk-based indexes (in particular the FTSE Developed Minimum Variance Index and FTSE EDHEC-Risk Efficient Developed Index) exhibit a substantial positive exposure to the size and illiquidity factors (see the table below). In other words, they have an overweight position in less liquid smaller-capitalisation stocks relative to the capitalisation-weighted index, although to a lesser extent than the equally weighted index.

The risk-based indexes display variable exposure to the volatility factor: the FTSE Developed Minimum Variance Index has positive exposure to the low volatility factor, whilst the FTSE EDHEC-Risk Efficient Developed Index exhibits a negative exposure (i.e., it is exposed to stocks exhibiting above-average levels of volatility).

### Average Factor Exposure – Risk-Based Indexes

<table>
<thead>
<tr>
<th></th>
<th>Illiquidity</th>
<th>12–month momentum</th>
<th>Quality</th>
<th>Size</th>
<th>Value</th>
<th>(Low) volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTSE Developed Equal Risk Contribution Index</td>
<td>0.63</td>
<td>-0.03</td>
<td>0.06</td>
<td>0.71</td>
<td>0.02</td>
<td>0.03</td>
</tr>
<tr>
<td>FTSE Developed Minimum Variance Index</td>
<td>1.03</td>
<td>0.00</td>
<td>0.12</td>
<td>1.24</td>
<td>0.04</td>
<td>0.23</td>
</tr>
<tr>
<td>FTSE EDHEC-Risk Efficient Developed Index</td>
<td>0.83</td>
<td>0.05</td>
<td>0.06</td>
<td>1.11</td>
<td>-0.01</td>
<td>-0.12</td>
</tr>
</tbody>
</table>

Source: FTSE Russell, data as at July 31 2015. FTSE Developed, FTSE Developed Minimum Variance, FTSE Developed ERC and FTSE EDHEC-Risk Efficient Developed indexes, September 2003–July 2015. The FTSE Developed Equal Risk Contribution Index and the FTSE Developed Minimum Variance Index are rebalanced semi-annually in March and September. The FTSE EDHEC-Risk Efficient Developed Index is rebalanced quarterly. Factor exposure is the monthly average exposure. Past performance is no guarantee of future results. Please see the disclaimer for important legal disclosures.
Factor exposure of alternatively weighted indexes varies over time

Although particular types of alternatively weighted indexes have their own characteristic factor exposures, the magnitude of these exposures varies over time.

For example, the value factor exposure of the FTSE RAFI Developed 1000 index became more pronounced during the financial crisis in early 2009, as equity market valuations became increasingly depressed. At the same time, the index’s quality factor exposure became increasingly negative (see the charts below).

Source: FTSE Russell, data as at July 31 2015. FTSE Developed and FTSE RAFI Developed 1000 indexes, March 2007–July 2015. The FTSE RAFI Developed 1000 index is rebalanced annually in March. Past performance is no guarantee of future results. Please see the disclaimer for important legal disclosures.
Similarly, the factor exposures of risk-based indexes have also varied substantially over time. For example, the size factor exposure of three FTSE risk-based indexes declined steadily during the 2003-2015 period, while the indexes’ value factor exposure has moved between positive and negative territory (see the charts below).

**Size Factor Exposure: Risk-Based Indexes**

- FTSE Developed Equal Risk Contribution Index
- FTSE Developed Minimum Variance Index
- FTSE EDHEC-Risk Efficient Developed Index

**Value Factor Exposure: Risk-Based Indexes**

- FTSE Developed Equal Risk Contribution Index
- FTSE Developed Minimum Variance Index
- FTSE EDHEC-Risk Efficient Developed Index


**Index objectives**

The factor exposures of alternatively weighted indexes tend to be variable over time because they are a by-product of the index design, rather than the indexes’ primary objective. By contrast, factor indexes have the specific objective of providing consistent exposure over time to the factor or factors of interest. In the next Insights of this series, we describe how factor indexes achieve this goal.
About FTSE Russell

FTSE Russell is a leading global provider of benchmarking, analytics and data solutions for investors, giving them a precise view of the market relevant to their investment process. A comprehensive range of reliable and accurate indexes provides investors worldwide with the tools they require to measure and benchmark markets across asset classes, styles or strategies.

FTSE Russell index expertise and products are used extensively by institutional and retail investors globally. For over 30 years, leading asset owners, asset managers, ETF providers and investment banks have chosen FTSE Russell indexes to benchmark their investment performance and create ETFs, structured products and index-based derivatives.

FTSE Russell is focused on applying the highest industry standards in index design and governance, employing transparent rules-based methodology informed by independent committees of leading market participants. FTSE Russell fully embraces the IOSCO Principles and its Statement of Compliance has received independent assurance. Index innovation is driven by client needs and customer partnerships, allowing FTSE Russell to continually enhance the breadth, depth and reach of its offering.

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