

SOLUTION OVERVIEW

FTSE Target Exposure Factor Indexes

Designed to minimize off-target factor exposures



Overview

The FTSE Target Exposure Factor Indexes provide investors with the ability to pursue a variety of explicit factor exposures, while reducing exposure to unwanted factors and controlling market, country and industry active bets.

The indexes are part of the FTSE Global Factor Index Series and employ FTSE Russell's well-established Tilt-Tilt methodology. The "bottom up" rules based methodology successively applies tilts to capture targeted exposures and applies corrective tilts to neutralize and/or minimize all off target exposures. The strength of each tilt is varied at each rebalance, to achieve specific exposure targets through time. Exposure outcomes are therefore flexible and may be combined to cater to specific investor objectives.

Features

- The indexes are designed to target specific levels of factor exposure in a rulesbased and investable format
- The Tilt-Tilt methodology provides index factor exposure in a more controlled manner, while balancing concerns about liquidity, capacity, diversification and turnover
- Eligible securities of each factor index are the constituents of the relevant FTSE Russell index universe such as FTSE-All World Index or Russell 1000® Indexes, respectively
- The indexes are also customizable – any underlying universe can be used, and a range of different factor tilt combinations and other screens can be applied

Results

- Reduction of off-target exposure; a key cause of implementation shortfall
- Ability to set market beta country and industry neutrality
- Allows creation of 'Pure' single factor indexes with reduced exposure to offtarget factors and to un-rewarded risk
- Multi-factor combinations can help mitigate investment cyclicalities by diversifying across several factors
- Specific exposure magnitudes enable investors to form reasonable tracking error expectations
- Potential for improvement in risk adjusted index outcomes



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Available indexes

Pure Single Factor Indexes*

- Russell 1000 Pure Single Factor Indexes
- China A Free Pure Single Factor Indexes
- Russell 2000 0.4 Quality Target Exposure Factor Index

Multi-Factor Indexes*

- FTSE All-World Target Exposure Qual/Vol Factor Index
- FTSE All-World Comprehensive Target Exposure Factor Index
- FTSE All-World Comprehensive High Target Exposure Factor
- FTSE Developed Comprehensive Target Exposure Factor Index
- FTSE Developed Comprehensive High Target Exposure Factor Index
- Russell 1000 Comprehensive Target Exposure Factor Index
- Russell 1000 Comprehensive High Target Exposure Factor Index
- FTSE Emerging Comprehensive Target Exposure Factor Index
- FTSE China A Free High Target Exposure Factor Index
- Russell 1000 Comprehensive Equal Factor Risk Contribution Target Exposure Index
- FTSE Developed ex US Comprehensive Equal Factor Risk Contribution Target Exposure Index

*See individual Methodology Overviews for more information

Factors at a glance

QUALITY	SIZE
VALUE	MOMENTUM
VOLATILITY	FTSE Target Exposure

The factors

A factor is a stock characteristic that is important in explaining a security’s risk and return. The FTSE Target Exposure Factor Indexes reference five equity factors, each of which is supported by academic research, with strong theoretical explanations as to why the factor historically has provided a premium.

- Factor-based investing is premised on the ability to identify factors that are expected to earn a positive premium in the future (i.e. factor exposures which are compensated)
- Factors tend to exhibit low correlation with one another, which means they may perform differently in different parts of the market cycle
- FTSE Russell’s factors represent common factor characteristics supported by a body of empirical evidence across different geographies and time periods

Factor premia and definitions

Factor	Description	Definition						
<table border="1"> <tr> <td>QUALITY</td> <td>SIZE</td> </tr> <tr> <td>VALUE</td> <td>MOMENTUM</td> </tr> <tr> <td>VOLATILITY</td> <td></td> </tr> </table>	QUALITY	SIZE	VALUE	MOMENTUM	VOLATILITY		<p>The Quality Premium: Higher quality companies tend to demonstrate higher performance than lower quality companies.</p> <p>Quality tilts: Can help capture companies with the ability to consistently generate strong future cash flows, while limiting exposures to stocks that are unprofitable or highly leveraged.</p>	<p>Composite of profitability, efficiency, earnings quality and leverage.</p>
QUALITY	SIZE							
VALUE	MOMENTUM							
VOLATILITY								
<table border="1"> <tr> <td>QUALITY</td> <td>SIZE</td> </tr> <tr> <td>VALUE</td> <td>MOMENTUM</td> </tr> <tr> <td>VOLATILITY</td> <td></td> </tr> </table>	QUALITY	SIZE	VALUE	MOMENTUM	VOLATILITY		<p>The Size Premium: Smaller companies tend to demonstrate higher performance than larger companies.</p> <p>Size tilts: Can help capture excess returns of smaller companies relative to their larger counterparts.</p>	<p>Log of full market cap.</p>
QUALITY	SIZE							
VALUE	MOMENTUM							
VOLATILITY								
<table border="1"> <tr> <td>QUALITY</td> <td>SIZE</td> </tr> <tr> <td>VALUE</td> <td>MOMENTUM</td> </tr> <tr> <td>VOLATILITY</td> <td></td> </tr> </table>	QUALITY	SIZE	VALUE	MOMENTUM	VOLATILITY		<p>The Value Premium: Stocks that appear cheap tend to perform better than stocks that appear expensive.</p> <p>Value tilts: Can help capture exposures at a reasonable price relative to their fundamentals.</p>	<p>Composite of cash flow, earnings and country relative Sales: Price Ratio.</p>
QUALITY	SIZE							
VALUE	MOMENTUM							
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<table border="1"> <tr> <td>QUALITY</td> <td>SIZE</td> </tr> <tr> <td>VALUE</td> <td>MOMENTUM</td> </tr> <tr> <td>VOLATILITY</td> <td></td> </tr> </table>	QUALITY	SIZE	VALUE	MOMENTUM	VOLATILITY		<p>The Momentum Premium: Stock performance tends to persist, either continuing to rise or fall.</p> <p>Momentum tilts: Can lead to the selection of companies with strong recent performance, with the expectation that this will continue to produce short term excess returns in the future.</p>	<p>Cumulative 11 month return.</p>
QUALITY	SIZE							
VALUE	MOMENTUM							
VOLATILITY								
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QUALITY	SIZE							
VALUE	MOMENTUM							
VOLATILITY								

Target Exposure Factor Index construction process

Step 1

Calculate Z-Scores and S-Scores

- Assign a 'raw' value to a given characteristic for each stock in the underlying index
- Normalize and truncate outliers to get Z-scores
- Z-scores are then mapped to S-scores using the exponential function:

$$S_{Val} = \text{Exp}[Z_{Val}]$$

Step 1 > Step 2

Weights – The Multiple Tilt

- The general expression for weights is given by:

$$W_T = W_{Mcap} \times \underbrace{S_{Val}^n \times \dots \times S_{Mom}^p}_{\text{Factor}} \times \underbrace{S_{Res}^q \times \dots \times S_{Em}^r}_{\text{ESG}} \times \underbrace{S_{Beta}^s}_{\text{Beta}} \times \underbrace{S_{Country}^t \times S_{Industry}^u}_{\text{Country \& Industry}}$$

- Where W_T are the weights in the final index, W_{Mcap} are market capitalization weights and n, \dots, u are the strengths of the tilts
- Weights are normalized to add up to 1

Step 1 > Step 2 > Step 3

Specify Targeted Objectives

- Factor objectives are given as a set of Exposure Targets which are measured in Z-Score units, that is units of cross-sectional standard deviation of the factor characteristics
- Country and industry objectives are stated as a targeted set of active weights that satisfy upper and lower bounds
- Beta, capacity, turnover, maximum stock weight objectives may also be set
- Incorporate ESG objectives if part of strategy

Step 1 > Step 2 > Step 3 > Step 4

Find the Tilt Strengths in Step 2 that satisfy the Targets set in Step 3

- This is done by solving a set of simultaneous equations for the tilt strengths (one for each targeted quantity)
- Relaxation rules are applied when a solution cannot be found or when the proposed set of weights drop below a given degree of diversification

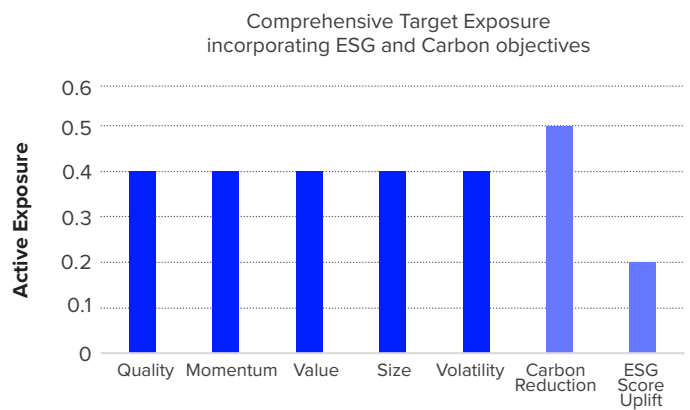
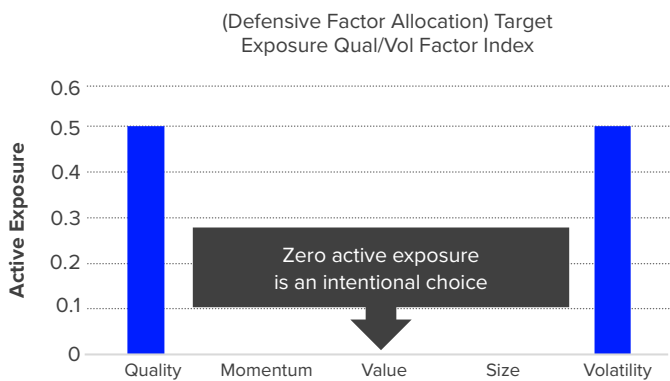
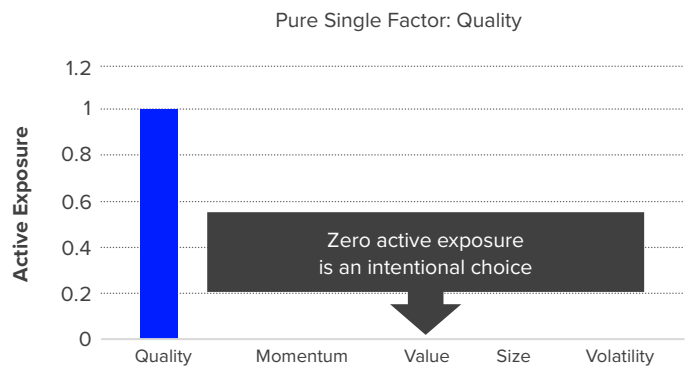
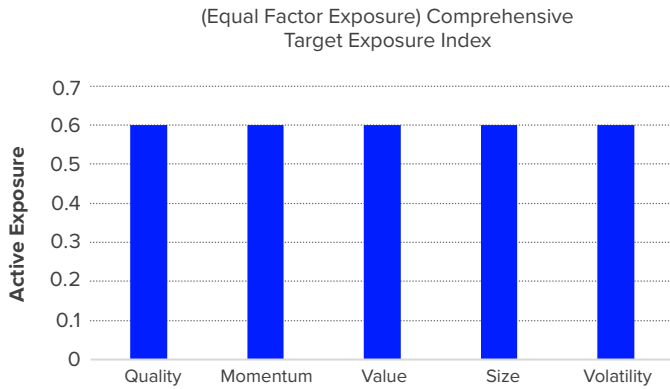
Step 1 > Step 2 > Step 3 > Step 4 > Step 5

Final Weights

- The factor tilt strengths n, \dots, u vary from rebalance to rebalance
- The resulting weights will satisfy all targeted objectives simultaneously

Target Exposure Factor implementation examples

- Allows precise factor control at rebalance
- Avoids unintentional factor exposures that lead to Implementation Risk
- Can incorporate other factor exposure characteristics such as:
 - Beta neutrality
 - Industry neutrality
 - Country neutrality
 - Carbon Reduction
 - ESG Score Uplift



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