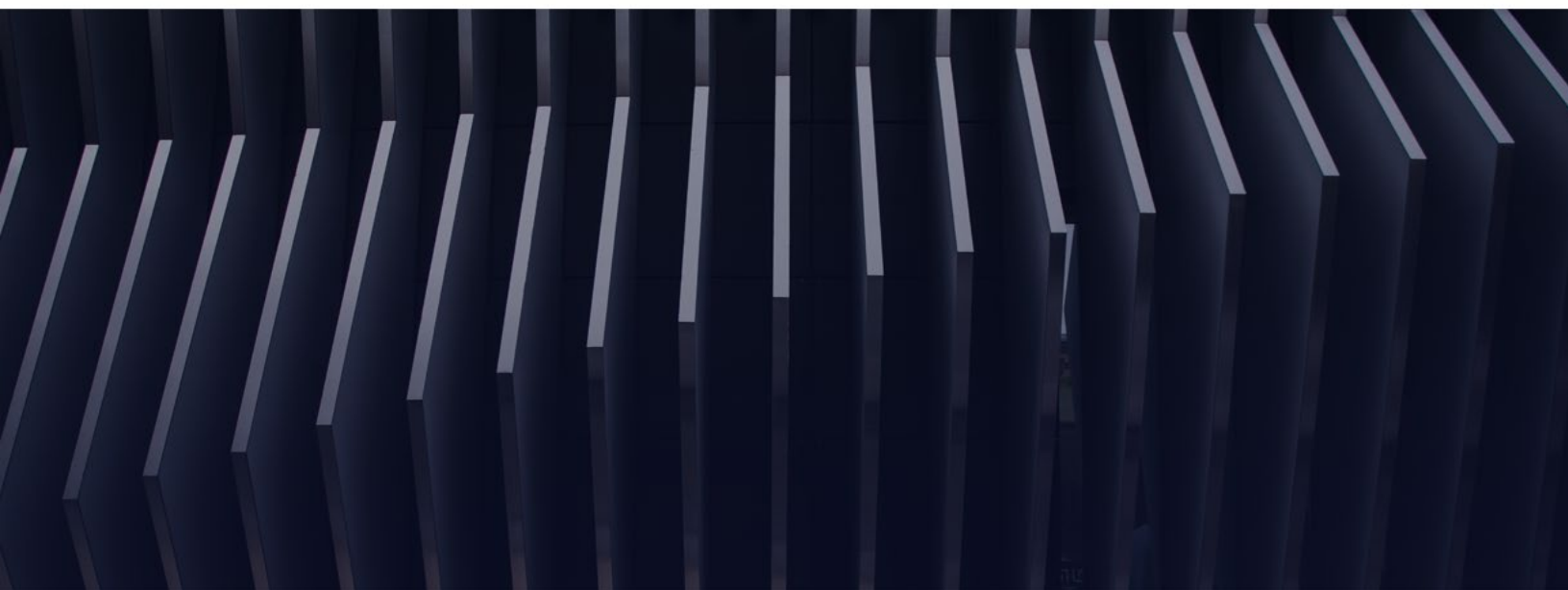


Wilshire Indexes

FT Wilshire Factor Index Series Methodology

November 2025



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Introduction

The indexes within the FT Wilshire Factor Index Series are designed to deliver precisely defined levels of exposure to academically verified factors including Value, Momentum, Quality, Size and Beta. This is achieved via a factor tilting methodology where an initial set of index weights are multiplied by positive scores to yield a new set of index weights with the required exposures. The details of the construction are set out below.

Price, total, and net return indexes are calculated for all member indexes. The reinvestment of all dividend payments is reflected in the total-return indexes at the close on the ex-dividend date but is not reflected in the price indexes. Only special dividends affect the price indexes.

Indexes are calculated in USD and variants converted to GBP, EUR, JPY, and other major currencies (using WM/Reuters 4pm London time exchange rates) are provided in index product files.

This document describes the procedures used to construct and maintain the FT Wilshire Factor Index Series. The document is reviewed at least annually but more frequent updates may be made in the light of market events or as a result of feedback obtained via a consultation. It should be read in conjunction with the [Wilshire Indexes Equity Index Calculation and Corporate Action Guide](#) which describes the index treatment of corporate actions and events, and the procedures to be followed for suspended or delisted securities, and at times of market disruption. The Equity Index Calculation and Corporate Events Guide applies to all standard FT Wilshire equity indexes and to other indexes calculated or administered by Wilshire Indexes where this is stated in the methodology documentation for those indexes.

In addition to this document, the indexes will have eligibility criteria including liquidity, nationality, and minimum size thresholds based upon the rules of the underlying index.

1 Index Construction

1.1 Constituents and Free Float Market Capitalization Weights

Constituents and their free floats and shares outstanding are taken from post close updates on the third Friday of the reconstitution month. Price is defined as the closing price at the cut-off date, adjusted for corporate actions which will go ex between the cut-off date and the post close updated data on the third Friday of the reconstitution month.

A constituent's free float market capitalization is then defined as the product of its free-float, shares outstanding and adjusted cut-off date price. A constituent's free float market capitalization weight is then defined by its free float market capitalization divided by the total free float market capitalization of the entire set of constituents.

1.2 Factor Definitions

The factor definitions set out in this section are in broad consensus with those found in academic literature.

1.2.1 Value (V)

Value is defined as an equally weighted composite of the latest Earnings Yield, Sales to Price Ratio, Cash Flow Yield and Book to Price Ratio. Individual raw quantities are rescaled and winsorized as described in Section 1.3 below. They are then averaged, and the resulting composite quantity is rescaled and winsorized again so that the distribution has mean zero, standard deviation one, and is restricted to the range -3 to +3. Historical fundamental data is lagged by two months.

1.2.2 Momentum (M)

Momentum is defined as the cumulative local price return, starting twelve months prior to, and ending one month before, the data cut-off date. Price data at the beginning and end of this period is therefore required to calculate Momentum.

1.2.3 Quality (Q)

Quality is defined as an equally weighted composite of the latest ROE, Accruals Ratio and Debt to Equity Ratio. Individual raw quantities are rescaled and winsorized as described in Section 1.3 below. They are then averaged, and the resulting

composite quantity is rescaled and winsorized again so that the distribution has mean zero, standard deviation one, and is restricted to the range -3 to +3. Historical fundamental data is lagged by two months.

1.2.4 Size (S)

Size is defined as the negative of the natural logarithm of the full company market capitalization calculated in USD. Shares are taken from post close updates on the third Friday of the reconstitution month. Price is defined as the closing price of cut-off date, adjusted for corporate actions which will go ex between the cut-off date and the third Friday of the reconstitution month.

1.2.5 Beta (β)

Beta is calculated as the negative of the covariance between stock total return and the underlying (market) index total return divided by the variance of the underlying index total return using two years of daily data prior to the data cut-off date. A minimum of 252 daily return observations are required to calculate a valid beta.

1.2.6 Industry Factor

The industry factor is defined by the variable:

$$\delta_{i \in I_J} = \begin{cases} 1 & \text{if } i \in I_J \\ 0 & \text{if } i \notin I_J \end{cases} \quad (1)$$

In other words, this variable takes the value of one if the stock i is a member of industry I_J and zero otherwise. The groupings comprise of the 11 industries set out in “Wilshire Indexes Global Assets Taxonomy System”.

1.2.7 Country Factor

The country factor is defined by the variable:

$$\delta_{i \in C_K} = \begin{cases} 1 & \text{if } i \in C_K \\ 0 & \text{if } i \notin C_K \end{cases} \quad (2)$$

In other words, this variable takes the value of one if the stock i is a member of country C_K and zero otherwise. The countries are the 48 Developed and Emerging countries set out in the [FT Wilshire Global Equity Market Series Methodology](#).

1.3 Calculation of Z-Scores and S-Scores

Raw factor values defined in Section 1 range over different scales. To put them on the same scale we subtract the cross-sectional mean from each raw value and then divide by the cross-sectional standard deviation. A winsorization process is then applied to ensure that all the results lie in the range -3 to +3. Missing values are assigned a value of zero.

Market capitalization weighted Z-Scores are then calculated as:

$$Z_{F,i} = \frac{F_i - \mu_M}{\sigma_M} \quad (3)$$

where F_i is the rescaled factor value and the market capitalization weighted mean and standard deviation is given by:

$$\mu_M = \sum_{i=1}^N M_i \times F_i \quad \text{and} \quad \sigma_M = \sqrt{\sum_{i=1}^N M_i \times (F_i - \mu_M)^2} \quad (4)$$

respectively and where M_i are the free float market capitalization weights.

Factor Z-Scores are mapped to “S-Scores” according to:

$$S_{F,i} = \text{Exp}[Z_{F,i}] \quad (5)$$

Similarly, industry and country “S-Scores” are calculated thus:

$$S_{I_j,i} = \text{Exp}[\delta_{i \in I_j}] \quad \text{and} \quad S_{C_K,i} = \text{Exp}[\delta_{i \in C_K}] \quad (6)$$

Hence each stock is assigned a set of positive numbers that increase monotonically with its factor Z-Scores or industry or country factors.

1.4 Multiple Tilt Equation

The factor index weights are given by the multiple tilt equation:

$$W_i = \frac{1}{\Omega} \times S_{V,i}^n \times S_{M,i}^p \times S_{S,i}^q \times S_{Q,i}^r \times S_{\beta,i}^s \times S_{I_1,i}^t \times \dots \times S_{I_{11},i}^u \times S_{C_1,i}^v \times \dots \times S_{C_{48},i}^x \times M_i \quad (7)$$

where $S_{F,i}^n$ is the tilt to factor F of strength n , $S_{I_j,i}^t$ is the J^{th} industry tilt of strength t , $S_{C_K,i}^v$ is the K^{th} country tilt of strength v and:

$$\Omega = \sum_{i=1}^N S_{V,i}^n \times S_{M,i}^p \times S_{S,i}^q \times S_{Q,i}^r \times S_{\beta,i}^s \times S_{I_1,i}^t \times \dots \times S_{I_{11},i}^u \times S_{C_1,i}^v \times \dots \times S_{C_{48},i}^x \times M_i \quad (8)$$

Tilt strengths can take positive or negative values. Varying the tilt strengths in equation (7) gives rise to different levels of active factor, industry and country exposures. Other tilts that control maximum weight, capacity and turnover may also be applied.

1.5 Exposure Targets

A set of factor exposure targets T_F is specified such that:

$$\sum_{i=1}^N W_i \times Z_{F,i} = T_F \quad \text{where } F \in (V, M, Q, S, \beta) \quad (9)$$

where the L.H.S of equation (9) represents the factor exposure of a set of weights W_i . Note that since: $\sum_{i=1}^N M_i \times Z_{F,i} = 0$ this is also the active factor exposure between the factor index and the underlying free float market capitalization index.

Lower L_{I_j} and upper U_{I_j} allowable limits are also specified for active industry target weights according to:

$$L_{I_j} \leq \sum_{i=1}^N (W_i - M_i) \times \delta_{i \in I_j} \leq U_{I_j} \quad \text{where } j \in (1, 2, \dots, 11) \quad (10)$$

where the middle term of equation (10) gives the active J^{th} industry weight of the factor index relative to the underlying market capitalization benchmark.

Similarly upper U_{C_K} and lower bounds L_{C_K} can be set for active country target weights:

$$L_{C_K} \leq \sum_{i=1}^N (W_i - M_i) \times \delta_{i \in C_K} \leq U_{C_K} \quad \text{where } K \in (1, 2, \dots, 48) \quad (11)$$

1.6 Factor Index Weights

Tilt strengths in equation (7) are found to satisfy equations (9), (10) and (11) along with any constraints on maximum weight, minimum weight, capacity ratio (factor index weight / market cap weight) and 2-way turnover. Where a target or range is not specified for a particular factor, industry or country, the tilt strength is set to zero.

Should the solution be infeasible, the active factor exposure targets are reduced by 2.5%, the lower and upper industry/country bounds are relaxed by 10bp and 2-way turnover target increased by 5%. This process is repeated until a solution is found or else up to a maximum of 40 times. Should the solution continue to be infeasible or be further away from the targeted factor, industry and country exposures than the current index weights, the index weights will consist of the pre-reconstitution index weights, renormalized to account for exclusion of stocks that are not members of the underlying index on the effective date.

2 Available Factor Indexes

Tables 1, 2 and 3 set out the various factor indexes in the series and the set of targets and parameters that specify them.

Table 1: Exposure Targets and Implementation Parameters for US Factor Indexes

	Active Exposure Targets						Implementation Parameters			
Index Name	V	M	Q	S	β	Industry	Max Weight (%)	Min Weight (bps)	Max Capacity Ratio	2-Way Turnover (%)
FT Wilshire US Large Pure Value	1.0	0	0	0	0	Neutral	5	5	20	80
FT Wilshire US Large Pure Momentum	0	1.0	0	0	0	Neutral	5	5	20	80
FT Wilshire US Large Pure Quality	0	0	1.0	0	0	Neutral	5	5	20	80
FT Wilshire US Large Pure Size	0	0	0	1.0	0	Neutral	5	5	20	80
FT Wilshire US Large Pure Beta	0	0	0	0	1.0	Neutral	5	5	20	80
FT Wilshire US Large 4-Factor Beta Neutral	0.5	0.5	0.5	0.5	0	Neutral	5	5	20	80
FT Wilshire US Large 5-Factor	0.4	0.4	0.4	0.4	0.4	Neutral	5	5	20	80
FT Wilshire US Small 4-Factor Size Neutral	0.5	0.5	0.5	0	0.5	Neutral	2	2	10	80

Notes:

The underlying benchmark for all “US Large” indexes is the FT Wilshire US Large Cap Index.

The underlying benchmark for all “US Small” indexes is the FT Wilshire US Small Cap Index.

Table 2: Exposure Targets and Implementation Parameters for Developed Factor Indexes

Index Name	Active Exposure Targets						Implementation Parameters			
	V	M	Q	S	β	Industry Country	Max Weight (%)	Min Weight (bps)	Max Capacity Ratio	2-Way Turnover (%)
FT Wilshire Developed Large Pure Value	1.0	0	0	0	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large Pure Momentum	0	1.0	0	0	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large Pure Quality	0	0	1.0	0	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large Pure Size	0	0	0	1.0	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large Pure Beta	0	0	0	0	1.0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large 4-Factor Beta Neutral	0.5	0.5	0.5	0.5	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed Large 5-Factor	0.4	0.4	0.4	0.4	0.4	Neutral +/-1%	5	2	20	80
FT Wilshire Developed ex US Large 4-Factor Beta Neutral	0.5	0.5	0.5	0.5	0	Neutral +/-1%	5	2	20	80
FT Wilshire Developed ex US Large 5-Factor	0.4	0.4	0.4	0.4	0.4	Neutral +/-1%	5	2	20	80

Notes:

The underlying benchmark for the “Developed Large” indexes is the FT Wilshire Developed Large Cap Index.

The underlying benchmark for the “Developed ex US Large” indexes is the FT Wilshire Developed ex US Large Cap Index.

Table 3: Exposure Targets and Implementation Parameters for Emerging Factor Indexes

Index Name	Active Exposure Targets						Implementation Parameters			
	V	M	Q	S	β	Industry Country	Max Weight (%)	Min Weight (bps)	Max Capacity Ratio	2-Way Turnover (%)
FT Wilshire Emerging Large Pure Value	1.0	0	0	0	0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large Pure Momentum	0	1.0	0	0	0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large Pure Quality	0	0	1.0	0	0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large Pure Size	0	0	0	1.0	0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large Pure Beta	0	0	0	0	1.0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large 4-Factor Beta Neutral	0.5	0.5	0.5	0.5	0	Neutral +/-1%	5	4	20	80
FT Wilshire Emerging Large 5-Factor	0.4	0.4	0.4	0.4	0.4	Neutral +/-1%	5	4	20	80

Notes:

The underlying benchmark for the “Emerging Large” indexes is the FT Wilshire Emerging Large Cap Index.

3 Index Maintenance

3.1 Index Reconstitution

The FT Wilshire Factor Index Series is reconstituted semi-annually in March and September. The data cut-off date is Wednesday before the first Friday of the reconstitution month. Constituent and free-float changes are updated after the close of trading on the third Friday of the reconstitution month.

3.2 Intra-Reconstitution Additions

Additions to the underlying benchmark will be eligible for inclusion at the next index reconstitution of the FT Wilshire Factor Index in March or September.

3.3 Intra-Reconstitution Deletions

A constituent will be removed from a FT Wilshire Factor Index if it is removed from the corresponding underlying benchmark. The deletion will be concurrent with that from the underlying benchmark and its weight will be distributed pro-rata amongst the remaining constituents in the FT Wilshire Factor Index.

4 Corporate Events

4.1 Corporate Action Treatment

Corporate action treatment for the FT Wilshire Factor Index Series can be found in the [Wilshire Indexes Equity Index Calculation and Corporate Action Guide](#). The Index Series will follow the non-market capitalization sections of the guide.

4.2 Suspension of Dealing

Suspension of Dealing rules can be found in [Wilshire Indexes Equity Index Calculation and Corporate Action Guide](#).

4.3 Takeovers, Mergers and Spinoffs

The treatment of takeovers, mergers and spinoffs can be found in the [Wilshire Indexes Equity Index Calculation and Corporate Action Guide](#).

Methodology Approval

This Index Methodology was approved by the Index Management Committee on 06 November 2025.

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