

Calculation of the Dynamic Planner Module of MSCI Multi-asset indexes – Technical Specification

MSCI Multi-asset indexes: Dynamic Planner Module

Dynamic Planner creates Strategic Asset Allocations for risk levels of Risk Profile 1 - 10 using the following 15 asset classes:

Cash
UK Sterling Corporate Bonds
UK Index Linked Gilts
UK Gilts
Global Bonds
Global High Yield Bonds
UK Equities
Europe Ex UK Equities
North American Equities
Japanese Equities
Asia Pacific Ex Japan Equities
Emerging Market Equities
Property
Commodities
Absolute Return



The MSCI Multi-asset indexes: Dynamic Planner Module are composite indices composed of the Strategic Asset Allocation to the aforementioned asset classes, the allocations to which are reviewed quarterly. The calculations must be calculated on a daily basis, based on end - of - day values indices, which are representative of each asset class.

Calculation principles

- ➔ The returns must be calculated by asset-weighting the individual portfolio returns using beginning - of - period values or a method that reflects both beginning - of - period values.
- ➔ The aggregate return method, which combines all the composite assets and cashflows to calculate composite performance as if the composite is one portfolio and is acceptable as an asset-weighted approach.
- ➔ The weights of the allocations must be rebalanced quarterly, when the asset allocations will be reviewed.
- ➔ Periodic and sub-period returns should be geometrically linked.

Calculation method

The following is the current calculation method:

1. Index values are converted to GBP. For example, if an asset class is reported for any currency other than GBP, it will need to be converted to GBP at the prevalent exchange rate.
2. The composite return calculation will be as follows:

$$R_t = \frac{\sum_{k=1}^K (V_{k,t}^B \times r_{k,t})}{\sum_{k=1}^K V_{k,t}^B}$$

Where,
 R_t = the beginning asset weighted return for the composite for period t
 k = number of asset classes (1, 2, 3, ..., K) in the composite at the beginning of the period t
 $V_{k,t}^B$ = the beginning value of the portfolio k for the period t
 $r_{k,t}$ = the return of the asset class k for the period t

The method can also be expressed as:

$$R_t = \sum_{k=1}^K \left(\frac{V_{k,t}^B}{\sum_{k=1}^K V_{k,t}^B} \times r_{k,t} \right) = \sum_{k=1}^K w_{k,t}^B r_{k,t}$$

Where $w_{k,t}^B$ is the weight of the value of the asset class k as a fraction of the total composite asset value based on beginning asset values for the period t , and can be calculated according to the following:

$$w_{k,t}^B = \frac{V_{k,t}^B}{\sum_{k=1}^K V_{k,t}^B}$$

3. Geometric Linking of the Periodic Composite Returns: To calculate the composite return over more than one period or sub-period. The composite return over the total period is calculated by geometrically linking the individual composite periodic returns using the following formula:

$$R_t^{TWR} = [(1 + r_1) \times (1 + r_2) \times (1 + r_3) \times \dots \times (1 + r_l)] - 1$$

Where R_t^{TWR} is the time weighted composite return for the period t and period t consists of l sub periods.

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