# MSCI

# MSCI Europe Quarterly Private Real Estate Debt Fund Index (Unfrozen) Methodology

Index Construction Objectives, Guiding Principles and Methodology for the MSCI Private Real Estate Debt Fund Indexes.

**June 2024**

# 1    Introduction

The objective of MSCI Europe Quarterly Private Real Estate Debt Fund Index (Unfrozen) ('Europe PRE Debt Fund Index') is to measure the performance of unlisted debt funds involved in Europe real estate lending, including the effects of cash holdings, leverage and fund operating costs, fees as well as the returns of the underlying debt investments.

To achieve this objective, index is constructed using the financial records of debt funds. The fund-level data used in constructing the Europe PRE Debt Fund Index is generally provided by or on behalf of the managers of funds. When available and appropriate, MSCI may supplement this data with information from public or third-party sources.

To effectively represent the performance of a market, market segment or strategy, the Index uses Net Asset Values (NAVs). The asset values used by the funds to calculate NAV are primarily debt valuations.

MSCI employs the Time Weighted Return (with adjustment for daily-weighted external cash flows), computation framework. This Methodology is described in this methodology document.

Europe PRE Debt Fund Index is governed by a set of methodology documents (Methodology Set) which define the full methodology governing a specific index. The Methodology Set for the index includes:

- MSCI Real Estate – Index Policies document describes the various governance policies related to the construction, maintenance, and termination of the index to provide consistency in decisions and avoid ambiguity in its responses to particular events.

- MSCI Global Data Standards for Real Estate Investment document describes the data methodology used for the index.

- MSCI Europe Quarterly Private Real Estate Debt Fund Index (Unfrozen) Methodology (this document)

# 2      Index Composition

The Europe PRE Debt Fund Index aims to include unlisted Europe real estate debt funds regardless of the structure and type of vehicles. As data provision is voluntary, exhaustive coverage of the market is generally not feasible. However, the widely shared interest of end investors in a rigorously defined and transparent framework for the comparison of funds' performance track records, can result in the achievement of high market coverage ratios.

## 2.1      INDEX INCLUSION REQUIREMENTS

The index inclusion criteria at point of inclusion for any fund joining the Europe PRE Debt Fund Index specifies that a fund should:

1.    Be an unlisted fund[1].

2.    Have at least 85% of the GAV (excl. cash) invested in Europe region.

3.    Have at least 85% of the GAV (excl. cash) invested in real estate debt.

Equity investment resulting from a loan restructuring linked debt-equity swap is considered as debt exposure in the eligibility assessment of constituents based on inclusion rule 3.

For a vehicle to be eligible for inclusion in the Index, its historical data must be provided and then validated and verified by MSCI.

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[1] Includes commingled funds, Separately Managed Accounts (SMA), Aggregated portfolio of loans.

## 2.2    SUB-INDEXES

For a Standard Debt Fund Index, the sub-indexes are also calculated. Sub-indexes represent the performance of one or more underlying segments of the Standard Index. A sub-index is defined using additional criteria for inclusion over and above the inclusion criteria listed above for the Standard Index.

In addition to the standard index, the following sub-indexes are published:

**By Fund Strategy (Seniority of Debt)**: These sub-indexes are based on vehicle strategy as per fund documentation.

1. **Senior Debt**: Includes funds that have a self-declared strategy to predominantly issue senior loans to real estate. This index has a base date of December 2018.

2. **Whole Loans**: Includes funds that have a self-declared strategy to predominantly issue Whole loans to real estate. This index has a base date of December 2021.

3. **Subordinated/Mezzanine Debt**: Includes funds that have a self-declared strategy to predominantly issue Subordinated / Mezzanine loans to real estate. This index has a base date of June 2018.

**By Geography Focus**: These sub-indexes are based on funds lending based on individual countries within Europe:

1. **UK**: Includes funds with ≥70% allocation to real estate loans issued in UK. This Index has a base date of June 2018.

2. **Continental Europe**: Includes funds with ≥70% allocation to real estate loans issued either in a single country in Continental Europe or across Continental Europe. This Index has a base date of June 2018.

**By Property Sector Focus**: These sub-indexes are based on funds lending based on specific property use type sectors:

1. **Diversified**: Includes funds with ≤50% allocation to single sector real estate loans. This Index has a base date of June 2018.

2. **Specialist**: Includes funds with ≥70% allocation to single sector real estate loans.

**By Fund structure**: These sub-indexes are based on structure of the funds as per the fund documentation:

1. **Open-ended**: Includes open-ended funds. This Index has a base date of December 2019.

2. **Closed-ended**: Includes closed-ended funds. This Index has a base date of June 2018.

**By Fund type**: These sub-indexes are based on type of the funds based on the pooling of investors, as per the fund documentation:

1. **Commingled**: Includes commingled/pooled funds. This Index has a base date of June 2018.

2. **Separate Account**: Includes separately managed accounts. This Index has a base date of December 2018.

**Closed-ended Fund by Vintage**: These sub-indexes are based on launch date of closed-ended funds, as per the fund documentation:

1. **Vintage 2019:** This Index has a base date of March 2020.

2. **Vintage 2020**

3. **Vintage 2021:** This Index has a base date of March 2022.

4. **Vintage 2022:** This Index has a base date of December 2022.

5. **Vintage 2023**

## 2.3 CHANGES IN COMPOSITION OF INDEX

Index composition changes may result from fund liquidations, as well as other changes to MSCI's access to fund data, including newly launched or existing funds providing their data to MSCI. Formal communication of a material change in the index composition will be done through an Index Announcement made available at www.msci.com, in accordance with the MSCI Real Estate – Index Policies.

The historical data provided by any data provider withdrawing from the index will be retained and continue to be used in index calculations. For an index with unfrozen history, new fund data that has met MSCI's quality standard will be included in the index historically. For an index with frozen history, new fund data will only be included going forward.

Index composition is checked for fund confidentiality rules and fund dominance rules defined below (refer section 4.4.1 and 4.4.2 from this document).

Any index may be discontinued or suspended, without notice, if fewer than the required minimum number of funds are eligible and available for inclusion, or if one portfolio or fund dominates the composition, when applying a given methodology to a market. MSCI may resume calculation of such index if over time enough funds become eligible and available.

The addition of new funds and withdrawal/termination of existing funds are normal events in the evolution of the Europe PRE Debt Fund Index to which the following requirements and clarifications also apply:

**New Funds**:

1. Are required to provide sufficient and complete data of their fund's performance, subject to a minimum of either 3 years or the period from date of launch of the fund.
2. As per the unfrozen index methodology, the returns of new funds will impact the historical returns of the Index. A change of mandate, structure, branding or manager does not warrant the removal of historical performance from the index.

**Removed/Withdrawn Funds**:

1. Withdrawal from the Index should be through written communication to MSCI and where possible, one quarter prior to the next index release.

**Re-admitted Funds**:

1. To be re-admitted to the Index, the funds must provide MSCI with the data to calculate their investment performance during the whole period since their last inclusion in the Index.
2. Re-admitted funds are subject to the same eligibility requirements as potential new constituents.

## 2.4    QUARTERLY ELIGIBILITY ASSESSMENT OF INDEX CONSTITUENTS

The fund characteristics may change over time either strategically or temporarily due to market movements or transaction activity. The quarterly review of eligibility is designed to ensure that the index composition is aligned with index inclusion criteria on an on-going basis. An observation period for funds temporarily not aligned to the index inclusion criteria is aimed at stability of index composition. Both quarterly review of eligibility and observation period ensures on-going review of index composition and reporting using a rules-based approach.

**Quarterly Review:** Following the index inclusion, MSCI reviews the constituent funds of the Europe PRE Debt Funds Index every quarter for their eligibility into the index based on the certain rules, as listed in Appendix I & II. Any non-adherence to the criteria based on quarterly eligibility assessment of the funds will result in a rules-based index exclusion, subject to the observation period, where applicable.

The rules within the scope of Quarterly Review and Observation Period are listed in Appendix I & II.

**Observation Period** is defined as a time window of four quarters in which MSCI will monitor the existing index funds that are in temporary non-adherence to a particular criterion. Any non-adherence to the specific inclusion rule for four consecutive quarters will result in rules-based exclusion of the fund in the fourth quarter.

See Exhibit 1 & 2 below for illustration of methodology of observation period applicable to the index & sub-indexes, respectively.

## EXHIBIT 1: ILLUSTRATION OF METHODOLOGY – OBSERVATION PERIOD FOR EXISTING INDEX CONSTITUENTS

| | Period 1 | Period 2 | Period 3 | Period 4 | Period 5 | Period 6 | Period 7 | Period 8 | Period 9 | Period 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| **Inclusion rule compliance (Yes / No)** | Yes | Yes | No | No | No | No | No | No | Yes | Yes |
| | | | Observation Period Prior to Exclusion | | | Fund excluded from the index | | | No observation period before Re-admission of fund | |
| **Index Inclusion Status (Yes / No)** | Yes | Yes | Yes | Yes | Yes | No | No | No | Yes | Yes |

## EXHIBIT 2: ILLUSTRATION OF METHODOLOGY – OBSERVATION PERIOD FOR EXISTING SUB-INDEX CONSTITUENTS

| | Period 1 | Period 2 | Period 3 | Period 4 | Period 5 | Period 6 | Period 7 | Period 8 | Period 9 | Period 10 | Period 11 | Period 12 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Inclusion Rule Compliance (Yes / No)** | Yes | Yes | No | No | No | No | No | Yes | Yes | Yes | Yes | Yes |
| | | | Observation Period Prior to Exclusion (4 quarters) | | | | | Observation Period Prior to Re-admission (4 quarters) | | | | |
| **Sub-Index Inclusion Status (Yes / No)** | Yes | Yes | Yes | Yes | Yes | No | No | No | No | No | Yes | Yes |

# 3 Data Collection and Validation

## 3.1 REAL ESTATE DEBT FUND DATA REQUIREMENTS

The data required for calculating the Europe PRE Debt Fund Index includes fund-level Net Asset Values (NAVs) and distributions. In addition, non-mandatory data may also be used to allow for more detailed analyses and the production of customized sub-index.

The table below describes the data field specifications for the Time-Weighted Return (TWR) calculation.

| Data category | Data used for calculating index returns |
|---|---|
| Time-Weighted Return (TWR) | |
| **NAV** | Total NAV |
| **Distributions (dividends)** | Distributions/dividend details on a day-dated basis |
| **Investment income** | Investment income before and after fees |
| **Vehicle Capital flows** | Capital invested and capital returned on a day-dated basis |
| **Fees** | Fund management fees, incentive fees (capital account and expense account) |
| **Currency** | Exchange rates** |

***Sourced from WM Refinitiv*

In addition to the data required to calculate their performance, MSCI uses fund-reported allocations and classifications data to assign funds to sub-indexes or to provide aggregated index characteristics. Examples of this category of data are described below.

| Data category | Examples of data used for classification of funds |
|---|---|
| **Property type allocation** | Loan Sector allocation |
| **Geography allocation** | Country allocation |
| **Vehicle Structure** | Open/closed |
| **Vehicle Strategy** | Core, Core+, Valed-added, Opportunistic |
| **Seniority of debt** | Senior Debt, Mezzanine Debt, etc. |
| **Vehicle Vintage** | Date of Launch |

More information on data definitions can be found in the MSCI Global Data Standards for Real Estate Investments.

## 3.2   NET ASSET VALUE REPORTING REQUIREMENTS

In addition to the standard requirements, as part of the MSCI Global Data Standards for Real Estate Investments, there are additional requirements for the NAV. These requirements are:

1. Vehicles are required to report their NAV on at least a quarterly basis and should have done so for the whole of the period of their performance history within the Index.
2. Constituents of the Index must agree to calculate their NAV on a consistent basis from quarter to quarter. This basis will that specified in their own articles of association (or equivalent).
3. NAV should be based on the loan assets being valued each quarter. The valuation of loans could be in-house or external.

# 4 Index Calculation Methodology

The calculations described below are applicable to individual funds as well as the index.

## 4.1 TIME-WEIGHTED RETURN (TWR)

The Time-Weighted Return Methodology with adjustment for daily-weighted external cash flows are being calculated at the private real estate debt fund level on a monthly basis.

### 4.1.1 NET TOTAL RETURN

At the fund level, for the TWR methodology, Net Total Return is defined as:

$$Net\ Fund\ Total\ Return_t = \left(\frac{Appreciation_t + \sum NIY_t}{WtdEq_t}\right) * 100$$

**Where:**

$$WtdEq_t = NAV_{t-1} + \sum_{i=1}^{n}\left[Days_{i,t} * NCI_{i,t}\right] - \sum_{i=1}^{n}\left[Days_{i,t} * Dist_{i,t}\right]$$

$$Appreciation_t = NAV_t - NAV_{t-1} - \sum NCI_t - (\sum NIY_t - \sum Dist_t)$$

**And:**

$Appreciation_t$ after fees in month t;
$NIY_t$ is the Net Investment Income after fees in month t;
$WtdEq_t$ is weighted equity (capital employed) in month t;
$NAV_{t-1}$ is the net asset value at the end of the previous month t-1;
$NAV_t$ is the net asset value at the end of the month t;
$Dist_t$ is the distribution for the Period;
$NCI_{i,t}$ is the net capital invested.
$Days_{i,t}$ = the weight of external cash flow i in month t, expressed as the number of days the cash flow is invested in a fund as a portion of the total number of days in month t.

Asuming that external cash flows occur at the start of the day, the weighting factor for each external cash flow is calculated as follows:

$$Days_{i,t} = \frac{D_t - D.cf_t + 1}{D_t}$$

**Where:**

$D_t$ = the total number of calendar days in month t;
$D.cf_t$ = the number of calendar days from the beginning of month t to the date of external cash flow i

### 4.1.2 NET INCOME RETURN

The Net Fund Income Return is calculated based on the Net Investment Income after fees generated in a month. There could be a deviation with the distributed income due to a time difference of the net investment income generation and the distribution as well as the fact that all or some of the income might be retained within the fund. At the fund level Net Fund Income Return is defined as:

$$Net\ Fund\ Income\ Return_t = \left(\frac{\sum NIY_t}{WtdEq_t}\right) * 100$$

**Where:**

$NIY_t$ is the Net Investment Income after fees in month t;
$WtdEq_t$ is weighted equity (capital employed);

### 4.1.3 NET CAPITAL RETURN

The Net Fund Capital Return is calculated based on the Net Asset Value change after fees adjusting it for net capital invested as well as for the net income retained (Net Invest Income minus Distributions) within the fund in a month. At the fund level Net Fund Capital Return is defined as:

$$Net\ Fund\ Capital\ Return_t = \left(\frac{Appreciation_t}{WtdEq_t}\right) * 100$$

**Where:**

$Appreciation_t$ after fees in month t;
$WtdEq_t$ is weighted equity (capital employed) in month t;

### 4.1.4 GROSS TOTAL RETURN

At the fund level Gross Fund Total Return is defined as:

$$Gross\ Fund\ Total\ Return_t = \left(\frac{Appreciation_t + \sum NIY_t + Fees_t}{WtdEq_t}\right) * 100$$

**Where:**

$Appreciation_t$ after fees in month t;
$NIY_t$ is the Net Investment Income after fees in month t;
$Fees_t$ is the total fees (management + incentive) in month t;
$WtdEq_t$ is weighted equity (capital employed) in month t;

### 4.1.5 GROSS INCOME RETURN

At the fund level Gross Fund Income Return is defined as:

$$Gross\ Fund\ Income\ Return_t = \left(\frac{\sum NIYBF_t}{WtdEq_t}\right) * 100$$

**Where:**

$NIYBF_t$ is the Net Investment Income before fees in month t;
$WtdEq_t$ is weighted equity (capital employed) in month t;

### 4.1.6 INDEX RETURN

The index return, calculated net of fund-level fees, is defined as:

$$Index\ Return_t = \left(\frac{\sum_{i=1}^{n}\left(Appreciation_{i,t} + \sum NIY_{i,t}\right)}{\sum_{i=1}^{n}\left(WtdEq_{t_{i,t}}\right)}\right) * 100$$

**Where:**

n is the number of funds in the index sample;
$Appreciation_{i,t}$ after fees of fund i in month t;
$NIY_{i,t}$ is the Net Investment Income after fees of fund i in month t;
$WtdEq_{i,t}$ is weighted equity (capital employed) of fund i in month t;

### 4.1.7 INTERPOLATION OF DATA FOR TWR INDEX

As stated above, regardless of the frequency of the index, monthly returns are calculated. This may require the interpolation of provided data, and assumptions about the timing of cash flows.

For data included in index where no data is received monthly:

- the NAV will be interpolated by using the latest available NAV, adjusted for the external cash-flows (Capital invested, Capital returned and Distributions) and non-distributed income (Net Investment Income – Distribution for each month).

    **Where:**

$$NAV_t = NAV_{t-1} + NCI_t + NIY_t - Dist_t$$

    **And:**

    $NAV_t$ is the net asset value at the end of the month t;
    $NAV_{t-1}$ is the net asset value at the end of the previous month t-1;
    $NIY_t$ is the Net Investment Income after fees in month t;
    $Dist_t$ is the distribution in the month t;
    $NCI_t$ is the net capital invested in the month t.

- the Net Investment Income both before and after fees as well as the fees will be equally spread across the months.

For data included in index where no data is received on a day-dated basis:

- the external cash flows (new capital invested, capital returned and distributions) will be equally spread over the months and timed at the middle of the month.

## 4.2 LONGER TERM RETURNS

### 4.2.1 INDEX VALUES

Starting from a base value of 100, each successive index value is calculated by multiplying the preceding index value by (1+monthly return):

$$\text{Index}_{t=0} = 100$$
$$\text{Index}_t = \text{Index}_{t-1} \times \left[1 + \frac{\text{TR}_t}{100}\right]$$

**Where:**

$TR_t$ is the total return for the period t-1 to t, expressed as a ratio

### 4.2.2  MULTI-PERIOD TIME-WEIGHTED TOTAL RETURN

The basis for calculating all annual and quarterly performance measures is time-weighted. Annual measures are calculated by compounding twelve monthly figures and annual figures are shown only when twelve months' figures are available. These measures gives an equal weight to each month. To calculate quarterly and annual returns it is necessary first to construct an index from monthly values.

The 12-month return, for example, is calculated as the percentage change in the index $(X_t)$ over the relevant 12 months.

$$12 \text{ Month Total Return} = \left[ \frac{\text{Index}_t}{\text{Index}_{t-12}} - 1 \right] \times 100$$

### 4.2.3  ANNUALIZED RATE

The annualized rate is the geometric mean of the individual annual rates of change for a series of years. It is calculated as the $n^{th}$ root of the final indexed score converted back into a percentage:

$$\text{Annualized Rate} = \left[ \left( \frac{\text{Index}_t}{\text{Index}_{t=0}} \right)^{1/n} - 1 \right] \times 100$$

**Where:**
n is the number of years
$\text{Index}_t$ is the final indexed score.
$\text{Index}_{t=0}$ is the initial indexed score.

## 4.3    EQUITY MULTIPLES

### 4.3.1    DISTRIBUTION TO PAID-IN CAPITAL (DPI)

Distribution to Paid-in (%) is a measure of the cumulative investment returned to the investor relative to invested capital.

$$DPI = \frac{Distributions_{(cumulative)} + Capital\ Returned_{(cumulative)}}{Paid\ in\ capital_{(cumulative)}}$$

**Where**

$Distributions_{(cumulative)}$ is the cumulative amount of income distributed to investors for all periods in the measurement till the reporting date.

$Capital\ Returned_{(cumulative)}$ is the cumulative capital returned to investors for all periods in the measurement till the reporting date.

$Paid\ in\ capital_{(cumulative)}$ is the cumulative paid in capital i.e., 'capital called' from investors for all periods in the measurement till reporting date.

### 4.3.2    RESIDUAL VALUE TO PAID-IN CAPITAL (RVPI)

Residual Value to Paid-in (%) is a measure of how much of the investors' capital is still retained as equity in the fund.

$$RVPI = \frac{NAV_t}{Paid\ in\ capital_{(cumulative)}}$$

**Where**

$NAV_t$ is the net asset value at the end of the month t;

$Paid\ in\ capital_{(cumulative)}$ is the cumulative paid in capital i.e., 'capital called' from investors for all periods in the measurement till reporting date.

### 4.3.3    TOTAL VALUE TO PAID-IN CAPITAL

Total Value to Paid-in (%) is the sum of DPI and RVPI

$$TVPI = \frac{Distributions_{(cumulative)} + Capital\ Returned_{(cumulative)} + NAV_t}{Paid\ in\ capital_{(cumulative)}}$$

## 4.4 RULES FOR PERFORMANCE REPORTING

### 4.4.1 FUND CONFIDENTIALITY RULES

To protect the confidentiality of the fund level data provided, MSCI applies strict confidentiality rules, which set the minimum number of constituents necessary to permit the reporting of an index. In any aggregate, the minimum acceptable number of funds is three.

However, if all data providers to an index have agreed to disclose individual fund results, an exception may be made.

### 4.4.2 FUND DOMINANCE RULES

To avoid the possibility of the weight of one fund dominating the representativeness of an index, MSCI employs dominance rules when determining the composition of an index.

When calculating an index, a maximum weight for any single contributing fund is calculated based on NAV. When the weight of a contributing fund in any index series exceeds 75% of index, the results will not be reported. This also applies to sub-indexes.

However, if all data providers to an index have agreed to disclose individual fund results, an exception may be made.

## 4.5 RANKING/DISTRIBUTIONS OF RETURNS

A percentile measure indicates the value below which a given percentage of a group of observations fall. For example, the 20th percentile is the value (or score) below which 20 percent of the observations may be found. The term percentile and the related percentile rank are often used to report scores describing performance levels, and are therefore very popular in summarizing a fund's return position within a peer group. For example, if a score is on the 86th percentile, it is higher than 86% of the other scores. In MSCI private real estate debt fund return reporting, the minimum sample required for showing percentile distributions at any aggregate level is at least 3 funds.

The 25th percentile is also known as the first quartile (Q1), the 50th percentile as the median or second quartile (Q2) and the 75th percentile as the third quartile (Q3). In general, percentiles and quartiles are specific types of quantiles.

In computing the weighted average of a compounded measure over longer than one month, a different sample of funds may be included as the period lengthens. When calculating percentiles, only those funds that have contributed in every underlying period are included. Therefore, the ranked sample may be smaller than the weighted aggregate results sample.

## 4.6    UNFROZEN HISTORY REPORTING

The returns of the MSCI Europe Quarterly Private Real Estate Debt Fund Index are unfrozen, which means they do not have fixed histories and returns will be updated when new historical data becomes available, or corrections are made. Therefore, the inclusion of historical data from a new fund with impacts the historical Index returns.

MSCI reviews unfrozen indexes annually to decide whether any index should potentially be frozen.

A proposal to freeze an index history is based on an analysis of the likelihood of future changes to historical data, including availability of new data, including:

- Market coverage level: The higher the ratio of MSCI data coverage to the estimated total debt funds investment market, the greater is the likelihood that historical market results will remain representative through the addition of new funds to the dataset.

- Review of historical restatement impacts: Comparing the difference between published results and results including any newly submitted data gives an indication of the consistency of historical results.

- Trends in numbers of funds joining the dataset and their perceived likelihood of supplying historical data.

A proposal to freeze the history of any Europe PRE Debt Fund Index will trigger a public consultation with market participants. If a decision is taken to freeze an index, that decision will be announced to the public before implementation as per the Methodology and Index Consultation Policy described in the "MSCI Real Estate – Index Policies" document.

## 4.7 CURRENCY CONVERSION

The index may have constituents which report its data in currency other than the one in which the index is denominated. Therefore, the calculation of the index requires values to be converted to a common currency. Depending on the usage of the output, this calculation is either performed on a fixed ("local currency") or variable exchange rate.

### 4.7.1 FIXED RATE CONVERSION

Fixed rate conversion is applied to remove the impact of currency on measure calculations. A monthly fixed rate method is applied to eliminate the need for historical changes. The application of this methodology for different performance measures is as follows:

- For monthly compounded growth measures, MSCI converts the relevant data using the exchange rate of the base month. For example, the data required for December 2022 growth measures are converted at the November 2022 exchange rate.

- For all spot measures – such as Net Asset Value, Gross Asset Value and Debt – with data collected as at month-end, values are converted using the corresponding month-end exchange rate. For example, December 2022 Net Asset Value is converted using the December 2022 exchange rate.

- Similarly, for spot ratios, such as the gearing ratios, the appropriate month-end exchange rate is used to convert both the numerator and denominator values in the calculation.

- For measures calculated by summation over time, such as 12-month net capital invested or 12-month distribution yield (where the numerator is calculated by summation), all values are converted using the exchange rate as at the end of final month of computation.

### 4.7.2  VARIABLE RATE CONVERSION

Performance measures based on variable rates include the impact of monthly changes in exchange rates. For variable rate reporting, each data item is converted using the corresponding month-end mid-rate, defined as the median of the bid and offer rates on the last day of the month. An exception to this is Capital Invested data, which is converted using the previous month rate.

For 1994 and later data, MSCI uses exchange rates from WM Refinitiv. For earlier data, rates from EcoWin and others are used.

## 4.8  OTHER MARKET INFORMATION REPORTING

### 4.8.1  GEARING

Gearing, or leverage, measures the level of debt in a fund and is aggregated at index level as follows:

### 4.8.2  AVERAGE LENDING INTEREST RATE

$$Average\ Lending\ Interest\ Rate = \frac{\sum_{i=1}^{n} Lending\ Rate_i * GAV_i}{\sum_{i=1}^{n} GAV_i}$$

**Where**

*Lending Rate* is the rate of interest at which loans are issued by fund *i*

*GAV* is the gross asset value of the fund *i*

*n* is the number of funds in the index

### 4.8.3  AVERAGE LENDING LTV

$$Average\ Lending\ LTV = \frac{\sum_{i=1}^{n} LTV_i * GAV_i}{\sum_{i=1}^{n} GAV_i}$$

**Where**

LTV is the loan to value ratio of the fund *i*

*GAV* is the gross asset value of the fund *i*

*n* is the number of funds in the index

### 4.8.4   AVERAGE REMAINING LOAN TERM

$$Average\ Remaining\ Loan\ Term = \frac{\sum_{i=1}^{n} Remaining\ loan\ term_i * GAV_i}{\sum_{i=1}^{n} GAV_i}$$

**Where**

Remaining loan term of fund i expressed in number of years

*GAV i* is the gross asset value of the fund *i*

*n* is the number of funds in the index

### 4.8.5   DRY POWDER

$$Dry\ Powder\ (\%) = \frac{\sum_{i=1}^{n} Cumulative\ Commited\ Capital_i - \sum_{i=1}^{n} Cumulative\ Paid\ in\ Capital_i}{\sum_{i=1}^{n} Cumulative\ Commited\ Capital_i}$$

**Where**

Cumulative value of capital committed by investors since inception of the fund i

Cumulative value of paid-in capital i.e., capital called by the fund i since inception

n is the number of funds in index

### 4.8.6   INTERNAL RATE OF RETURN (IRR NAV)

IRR is calculated by solving the following expression iteratively for the term r

$$-FundBaseValue_0 + \frac{FundCashflow_1}{(1+r)^{\frac{(t_1-t_0)}{365}}} + \frac{FundCashflow_2}{(1+r)^{\frac{(t_2-t_0)}{365}}} + \cdots + \frac{FundCashflow_n}{(1+r)^{\frac{(t_n-t_0)}{365}}} + \frac{FundNAV_T}{(1+r)^{\frac{(T-t_0)}{365}}} = 0$$

**Where**

FundBaseValue$_0$ is the earliest available cashflow for the fund after inception. Where cashflow is not available, then earliest available NAV is used.

*FundCashflow$_t$* Cashflow for month 't'. Cashflow components are:

- Capital invested into the fund
- Capital returned by the fund
- Income distributed by the fund

*FundNAV$_t$* is the latest net asset value at the end of the measurement period

# 5    Governance of the Index

MSCI uses the following committees to provide overall oversight and governance for benchmark administration for Europe PRE Debt Fund Index:

a. The index is owned, compiled, and calculated by MSCI.

b. Governance is provided by the Private Real Estate Index –

- the Risk and Regulatory Committee ("RRC"),

- the Index Policy Committee ("IPC") and

- the Real Estate Index Committee ("REIC")

All the committees are staffed solely by MSCI group company employees with extensive relevant experience.

All committee members are expected to act with integrity as is required of all our employees according to our Code of Ethics and Business Conduct posted on www.msci.com, and are subject to MSCI's compliance policies, including with respect to confidential information and relevant Chinese Walls.

All decisions taken by the committees are the responsibility of their members.

MSCI retains all Intellectual Property Rights (IPRs) in the index methodologies and the index including those variations and derivative methodologies of the standard methodologies as well as those methodologies that may be generated during the course of the Agreement.

# 6 Appendix I: Inclusion criteria – Europe PRE Debt Fund Index

| Inclusion criteria | | Eligibility reviewed at the point of inclusion | Quarterly review of eligibility | Observation period |
|---|---|---|---|---|
| 1. Listing Status | Unlisted | Yes | Yes | - |
| 2. Minimum allocation by geography | Have at least 85% of the GAV (excl. cash) invested in Europe region | Yes | Yes | Yes |
| 3. Fund status | Have at least 85% of the GAV (excl. cash) invested in real estate debt | Yes | Yes | Yes |

# 7 Appendix II: Inclusion criteria – Sub-Indexes in the Europe PRE Debt Fund Index

| Sub-Index Name | Inclusion Criteria | Eligibility reviewed at the point of inclusion | Quarterly review of eligibility | Observation period |
|---|---|---|---|---|
| **By Fund Strategy (Seniority of Debt)** | | | | |
| Senior Debt | As per fund documentation | Yes | Yes | -- |
| Whole Loans | As per fund documentation | Yes | Yes | -- |
| Subordinated/Mezzanine Debt | As per fund documentation | Yes | Yes | -- |
| **By Geography Focus** | | | | |
| UK | Funds with ≥70% of GAV (excl. cash) invested in real estate loans issued in UK | Yes | Yes | Yes |
| Continental Europe | Funds with ≥70% of GAV (excl. cash) invested in real estate loans issued in Continental Europe. | Yes | Yes | Yes |

| Sub-Index Name | Inclusion Criteria | Eligibility reviewed at the point of inclusion | Quarterly review of eligibility | Observation period |
|---|---|---|---|---|
| **By Property Sector Focus** | | | | |
| Diversified | Funds with ≤50% of GAV (excl. cash) invested in a single sector real estate debt. | Yes | Yes | Yes |
| Specialist | Funds with ≥70% of GAV (excl. cash) invested in a single sector real estate debt. | Yes | Yes | Yes |
| **By Fund Structure** | | | | |
| Open-ended | As per fund documentation | Yes | Yes | -- |
| Closed-ended | As per fund documentation | Yes | Yes | -- |
| **By Fund Type (Based on pooling of investors)** | | | | |
| Commingled | As per fund documentation | Yes | Yes | -- |
| Separate Account | As per fund documentation | Yes | Yes | -- |

| Sub-Index Name | Inclusion Criteria | Eligibility reviewed at the point of inclusion | Quarterly review of eligibility | Observation period |
|---|---|---|---|---|
| **Closed-ended Funds by Vintage** | | | | |
| Vintage 2019 | Launch date as per fund documentation | Yes | Yes | -- |
| Vintage 2020 | Launch date as per fund documentation | Yes | Yes | -- |
| Vintage 2021 | Launch date as per fund documentation | Yes | Yes | -- |
| Vintage 2022 | Launch date as per fund documentation | Yes | Yes | -- |

# 8    Appendix III: Versioning Table

| Version | Publication Date | Key Changes |
|---------|------------------|-------------|
| V1 | 10 June 2024 | First release of MSCI Europe Quarterly Private Real Estate Debt Funds Index (Unfrozen) Methodology. |

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