



The Index Guide 2025 Market Information

INREV is the European Association for Investors in Non- Listed Real Estate Vehicles. Our aim is to improve the accessibility of non-listed real estate vehicles for institutional investors by promoting greater transparency, accessibility, professionalism and standards of best practice.

As a pan European body, INREV represents an excellent platform for the sharing and dissemination of knowledge on the non-listed real estate industry.

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Executive summary

- > INREV's suite of indices now includes 12 publications
- > The INREV Annual Index was launched in 2005 and is the longest standing in the suite
- > INREV released its latest Index in 2023, the Global ODCE Index in collaboration with ANREV and NCREIF

Unfrozen INREV Annual Index

The **INREV Annual Index** was launched in 2005 and measures net asset value performance of European non-listed core and value added real estate funds on an annual basis. The series history has since extended back to 2001.

Historical data collection extends the history of the INREV Quarterly Index

The **INREV Quarterly Index** was launched in 2011 and measures net asset value performance of European non-listed core and value added real estate funds on a quarterly basis. The series history has since been extended back to Q2 2000.

A global collaboration creates GREFI

The **GREFI** (Global Real Estate Funds Index) was launched in 2014 and represents a collaboration between ANREV, INREV and NCREIF. The Index measures quarterly net asset value performance of non-listed real estate funds on a global basis. The history of the index starts in Q1 2005, with global strategy funds being added to GREFI in 2015.

German Spezialfonds and Publikumsfonds

The **German Vehicles Indices**, both annual and quarterly, were launched in 2016 and measure net asset value performance of non-listed real estate vehicles domiciled in Germany, specifically Spezialfonds and Publikumsfonds. Performance is measured on an annual and quarterly basis and is net of fees.

Measuring the performance of closed end vehicles

The **IRR Index** was launched in 2018 and measures the since inception internal rate of return performance of all European closed end non-listed real estate vehicles and includes core and value added as well as opportunity funds.

The **Global IRR** Index was launched in 2020 in collaboration with ANREV, INREV and NCREIF and measures the since inception performance of non-core (value-added and opportunity) Asian-Pacific, European and US closed end non-listed real estate vehicles.

ODCE Index leaves consultation phase

The **INREV European Open End Diversified Core Equity (ODCE) Fund Index** is the first pan-European performance Index focused on this major group of funds. The Index fills an important gap for global institutional investors. European ODCE funds must exhibit compliance with strict eligibility criteria for four consecutive quarters before they are admitted to the Index.

Capturing asset Level performance across Europe

The **Asset Level Index** was launched in 2019. The Index measures the performance of real estate assets across Europe in all property sectors. The index has an inception date of Q4 2013.

Performance excludes the impact of leverage and vehicle level costs and fees. There are also plans to provide a "gross of fees" performance number.

The Global ODCE Index is the first global diversified core open-end fund index

The index launched in 2023 is the latest in a suite of global indices aimed at enhancing the transparency of the non-listed real estate investment industry. It focuses on open end diversified core equity funds across all three global regions.



SECTION 1

Introduction

INREV

Introduction

The Index Calculation Guide provides an overview of INREV's suite of indices and their specific characteristics.

The first index was launched in 2005 and the suite of indices has now grown to include 11 publications:

- INREV Annual Index
- INREV Quarterly Index
- GREFI – Global Real Estate Fund Index
- German Vehicles Annual Index
- German Vehicles Quarterly Index
- IRR Quarterly Index
- European ODCE Quarterly Index
- Asset Level Annual Index
- Asset Level Quarterly Index
- Global IRR Index
- Global ODCE Index

INREV does not use publicly available information, and both members and non-members of INREV can provide data for the Indices.

INREV encourages data delivery via the [Data Input Tool](#), where possible.

INREV would like to thank the [Performance Measurement Committee](#) for their guidance and support in developing these index products, and all participants for providing their data to the indices.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#).

Index use

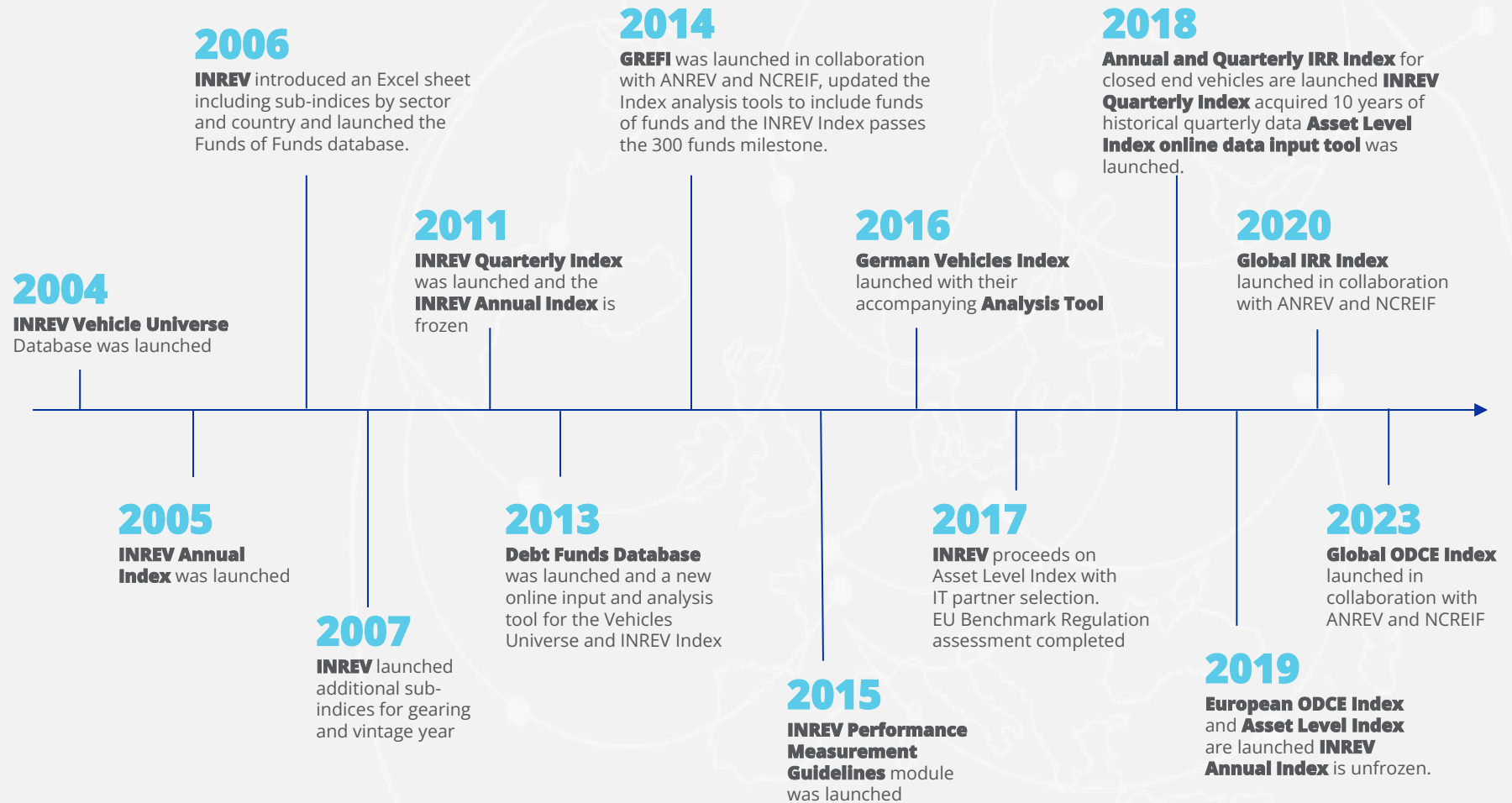
INREV indices do not meet the legal criteria for a “benchmark” under the Benchmarks Regulation (2016/1011/EU).

A benchmark is defined under the regulation as any index by reference to which the amount payable under a financial instrument or a financial contract, or the value of a financial instrument, is determined, or an index that is used to measure the performance of an investment fund with the purpose of tracking the return of such index or of defining the asset allocation of a portfolio or of computing the performance fees.

INREV indices can be used for market comparison purposes or for other purposes that do not violate the limitations set out in applicable laws and regulations. In case of uncertainty, you should seek legal advice.

For more information about the EU BMR visit [Public Affairs Monthly Briefings](#).

Developments





EUROPEAN INDICES

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SECTION 2

Fund Level Index

Fund Level Index - introduction

Introduction

The [Fund Level Index](#) measures net asset value performance of European non-listed real estate funds. Performance is measured net of fees and other costs, and represents the aggregate investor return.

The Index was launched in 2005 and includes historical data back to 2001. It is an unfrozen index which means that historical data can change with future updates. It was previously frozen in 2011, and subsequently unfrozen in 2019 due to the success of the Historical Data Collection project which led to a much larger and a more comprehensive sample of funds for the European non-listed real estate industry

Data collection

The Index results are based on fund level data that is provided to INREV directly by managers.

Quarterly data collection starts immediately after a quarter has ended for a period of up to 6 weeks after quarter end

Annual data collection starts immediately after a year has ended for a period of up to 12 weeks after year end

The Annual Index includes annually, bi-annually and quarterly valued funds

INREV encourages managers to deliver data via the [INREV Data Platform](#).

Publication and accompaniments

The Quarterly Index will be released 8 weeks after quarter end and the Annual Index will be released 14 weeks after quarter end.

The publications include:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members
- An [Analytical Tool](#) to carry out detailed analysis

Review of calculations

An external third party performs a review of the Fund Level Index and verifies the index calculation once a year.

Confidentiality

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

Fund Level Index - index specification

Inclusion criteria

- Institutional funds, target >50% institutional holding
- Funds invested in Europe, target >90% of GAV invested in European real estate
- Commingled funds, target >2 investors
- Only core or value added funds are included but not opportunity funds.
- The Annual Index includes annually, bi-annually and quarterly valued vehicles
- The Quarterly Index includes quarterly valued vehicles only

Classification

Core and value added funds are self-defined by the manager.

The Continental European Funds Index comprises all funds except single country funds investing in the UK and Ireland.

The Nordic, Central and Eastern European, Southern European and Western European fund Indices include funds with a multi-country and single country strategy investing in that respective region.

The pan-European Funds Index includes multi-country funds which do not have a specific Western European, Central and Eastern European, Southern European or Nordic strategy.

The multi-country and multi-sector Indices include funds which have a strategy to invest in more than one country and more than one sector, respectively.

Performance calculation

The Modified Dietz methodology is used to calculate net asset value fund performance.

The total return measures performance over a specific period.

The total return is calculated as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions + distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The capital growth is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The distributed income return is computed as follows:

$$\frac{\sum distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

NAV_t – net asset value at time t (end of period)

NAV_{t-1} – net asset value at time t-1 (end of the previous period)

TwdC – time weighted (daily) contributions over the period

TwdD – time weighted (daily) distributions over the period

TwdR – time weighted (daily) redemptions over the period

The index results are calculated on a pooled return basis.

In the case of the Annual index, year-on-year performance is calculated using the Modified Dietz methodology for the year. All multi-period returns are calculated using annual chain-linked performance data.

In the case of the Quarterly index, the annual and other multi-period returns are calculated using quarterly chain-linked performance data.

Currency conversion

To calculate aggregate returns, a local currency methodology is used to remove the impact of currency fluctuations. All non-euro cashflows are converted into the EUR base currency, to weight the Index. The NAV and capital flows are converted into EUR using the currency conversion rate prevailing on the first day of the period, thereby eliminating any currency movements. during the period.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#).



SECTION 3

Open End Diversified Core Equity
Funds Index (ODCE)

ODCE Index - introduction

Introduction

The [ODCE Index](#) measures the performance of open end core funds with a strategy to invest across Europe and across multiple sectors. Performance is measured net of fees and other costs, and represents the aggregate investor return.

The first publication of the Index was launched as a consultation release in the beginning of April 2019 and is published 8 weeks after quarter end. The Index left the consultation phase in April 2022.

The European ODCE is a subset of the INREV Quarterly Index and returns are calculated on a NAV-weighted cash-based and time weighted return approach using a Modified Dietz methodology.

European ODCE funds must exhibit compliance with strict eligibility criteria (see next slides) for four consecutive quarters before they are admitted to the Index.

The INREV European ODCE Fund Quarterly Index is an unfrozen index which means that historical data can change with future updates. When a fund meets the inclusion criteria the fund will be added to the index inclusion from the point the inclusion criteria were met. The Index has an inception date of Q3 2011.

Data collection

The Index results are based on fund level data that is provided to INREV directly from managers.

Data collection starts immediately after a quarter has ended for a period of up to 6 weeks after quarter end.

INREV encourages managers to deliver data via the [INREV Data Platform](#).

Publication and accompaniments

The publication includes:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members
- An [Analytical Tool](#) to carry out detailed analysis

Review of calculations

An external third party performs a review of the ODCE Index and verifies the index calculation.

ODCE Index - Index inclusion criteria

Inclusion criteria

- The fund is visible in the Vehicles Universe, and the fund name, manager name are stated as contributors to the Index and the Individual Fund Factsheet is visible in the Quarterly index publication
- Institutional funds, targeting >50% institutional holding
- Commingled funds, >2 inde
- Core, open end funds with a pan-European strategy only
- No more than 60% of real estate portfolio in one main geography, with at least two of the three main geographic exposures in the overall real estate portfolio, with a minimum of 5% in each
- Funds are valued externally at least quarterly, using the RICS, IVS or another mark-to-market valuation standard
- Funds are audited annually
- Funds are reporting on an INREV NAV basis as of Q1 2022
- Funds targeting at least 80% of GAV in real estate
- At least 75% of the real estate portfolio is invested in at least three of the four main property types with a minimum allocation of 5% each and no more than 65% in one main property type (see diversification)
- At least 80% of real estate portfolio is invested in stabilised operating assets. Stabilised operating assets include all assets in standing investment/operating category and only those assets with financial occupancy of 75% or above (see appendix 3 for details on the life cycle definitions)
- Funds have a financial occupancy of at least 75%
- Funds with the actual leverage =< 40%

Diversification

For the purpose of diversification requirements INREV identifies:

- Five property types
 - Industrial/logistics (main)
 - Office (main)
 - Residential (main)
 - Retail (main)
 - Other
- Eight geographies
 - United Kingdom (main)
 - Germany (main)
 - France (main)
 - The Netherlands
 - The Nordics
 - Southern Europe
 - Central and Eastern Europe (CEE)
 - Other mature Western European geographies

For a more detailed overview see next two pages

Property types and geography breakdown

	Sector	Sub sector
1	Industrial/logistics (main)	Industrial, Logistics, Distribution Warehouse and Other industrial/logistics
2	Office (main)	Office, Office park, Medical offices, Life sciences and Other office
3	Residential (main)	Private Rental Sector/Multi-family, Private Rental Sector/Single-family, Social housing, Student housing/Direct let and Student housing/Leased
4	Retail (main)	High street shop, Shopping centre, Retail park, Retail warehouse, Supermarket/Superstore, Department store, Public houses/Bars and pubs and Other retail (post offices, banks etc.)
5	All other remaining sectors	Health and fitness, Restaurants, Leisure other, Hospital, Hospitals care homes, Assisted living homes, Retirement homes, Nursing homes, Health clubs, Education centers, Kindergartens, Parking, Hotel, Data centers, Self storage, Farms, Woodland and Other

	Geography	Country
1	UK (main)	
2	Germany (main)	
3	France (main)	
4	The Netherlands	
5	The Nordics	Denmark, Finland, Norway and Sweden
6	Southern Europe	Italy, Spain, Portugal, Greece and Cyprus
7	Central and Eastern Europe (CEE)	Czech Republic, Hungary, Poland, Slovakia, Slovenia and other European geographies as they mature and offer institutional stock
8	Other mature western European geographies	Austria, Belgium, Ireland, Luxembourg and Switzerland

Life cycle definitions

INREV fund level life cycle categories	INREV asset level life cycle categories	Detailed definitions
Development	Pre-development	Raw land or land undergoing property site development
	Development	Property under construction, including preparation and installation of infrastructure
Initial leasing/stabilisation	Initial leasing/stabilisation	Completed construction that has been available for occupancy for less than one year
Standing investment/operating	Standing investment/operating	Completed construction that has been available for occupancy for more than one year. In stabilized, operating phase
Redevelopment	Renovation	Undergoing substantial rehabilitation or remodeling. If more than 50% of the asset is renovated (measured by market value).
	Conversion	Undergoing conversion to another asset type. If more than 50% of the asset is converted (measured by market value).
	Expansion	Undergoing substantial expansion (where additional investment exceeds 30% of the last market value).

ODCE Index - Index specification

Governance

- Qualification period and timing of eligibility criteria: Funds can only be included in the Index if they satisfy the eligibility criteria for 4 quarters in a row. The same 4 consecutive quarters principle applies to trigger potential exclusion from the Index, subject to allowing for market forces. INREV will monitor that all participating funds meet inclusion criteria on a quarterly basis and will inform those individuals funds that are in breach at the first quarter of such breach, to give time to remedy the situation.
- Notification procedures: to minimise operational risks new joiners to the Index should start the on-boarding process at the quarter end to be included in the Index for the next quarter end reporting.
- Participation in the ODCE Focus group should start as part of the onboarding process and before inclusion.
- A detailed Fund Interview should take place soon after the on-boarding process began and before the inclusion (next quarter reporting).
- INREV Data Platform: all new joiners to the Index are required to have a bespoke training on the use of and INREV Data Platform and the double sign off process and commit to the data provision deadlines for the ODCE Index (final deadline for quarterly ODCE Index data submission is every 6th Wednesday after the quarter end).
- Asset Level Index: new joiners to the Index are required to commit to providing Asset Level data within 6 months of inclusion to the Index.

Confidentiality

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

ODCE Index - Index methodology

Performance calculation

The Modified Dietz methodology is used to calculate net asset value fund performance.

The total return measures the performance over a specific period and does not include projections to the end of the fund's life.

The total return is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions + distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The capital growth is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The distributed income return is computed as follows:

$$\frac{\sum distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

NAV_t – net asset value at time t (end of period)

NAV_{t-1} – net asset value at time t-1 (end of the previous period)

TwdC – time weighted (daily) contributions over the period

TwdD – time weighted (daily) distributions over the period

TwdR – time weighted (daily) redemptions over the period

Multi-period returns are calculated using chain-linked performance data.

The index results are calculated on a pooled return basis.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#).



SECTION 4

Internal Rate of Return Index
(IRR)

IRR Index - introduction

Introduction

The [IRR Index](#) measures the since inception internal rate of return performance of European closed end non-listed real estate vehicles. Performance is measured net of fees and costs.

The IRR Index is computed on both a pooled return basis and an equally weighted basis (arithmetic mean).

The first IRR Quarterly Index was published in June 2018 and is published 9 weeks after quarter end.

The IRR Quarterly Index is an unfrozen index which means that historical data can change with future updates. Any funds that are unable to meet the data reporting deadlines will be included in the next index release. In the case of funds reporting with a lag the latest available NAV is used for the IRR calculations.

Data collection

The Index results are based on vehicle level data that is provided to INREV directly from managers.

Data collection starts immediately after a quarter has ended for a period of up to 6 weeks after quarter end.

INREV encourages managers to deliver data via the [INREV Data Platform](#).

Publication and accompaniments

The publication includes:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members
- An [Analytical Tool](#) to carry out detailed analysis

IRR Index - index specification

Inclusion criteria

- Only vehicles that have provided full cash flows (capital calls, redemptions and distributions) since inception
- Closed end vehicles
- Vehicles targeting Institutional Investors only
- All styles are included, core, value added and opportunity
- All vehicles are included, funds, separate accounts, joint ventures and club deals
- Vehicles invested in Europe, >90% of GAV invested in European real estate
- Quarterly valued vehicles

Classification

Styles are self-defined by the manager.

Non-core includes value added and opportunity vehicles.

Year of first closing is used as a proxy for vintage year and is provided by the manager.

The Multi-country Index includes vehicles that have a strategy to invest in more than one country.

The Multi-sector Index includes vehicles that have a strategy to invest in more than one sector.

Confidentiality

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

Quartiles and the interquartile range are displayed only when the sample size includes 8 or more vehicles from 3 different managers.

Performance is included only when a vehicle has at least 5 quarters of cash flows submitted to the platform.

IRR Index - index methodology

Performance calculation

The IRR, internal rate of return, is also known as a money-weighted return.

The since inception IRR (SI-IRR) for each vehicle is computed as follows:

$$f_0 + \frac{f_1}{(1+IRR)} + \frac{f_2}{(1+IRR)^2} + \frac{f_3}{(1+IRR)^3} + \dots + \frac{f_n}{(1+IRR)^n} = 0$$

Where:

$f_0 \dots f_n$ denotes the cash flows for the period 0 through to period n (positive values for inflows and negative values for outflows)

Pooled return

The pooled return represents the weighted average IRR by pooling the cash flows of all vehicles of the same vintage.

The pooled return IRR Index per vintage is computed as follows:

$$f_0 + \frac{f_1}{(1+IRR)} + \frac{f_2}{(1+IRR)^2} + \frac{f_3}{(1+IRR)^3} + \dots + \frac{f_n}{(1+IRR)^n} = 0$$

Where:

$f_0 \dots f_n$ denotes the cash flows for all vehicles of the same vintage over the period 0 through to period n (positive values for inflows and negative values for outflows)

Cumulative distributions to paid in capital multiple (DPI)

The DPI, cumulative distributions to paid in capital multiple, also known as the realisation multiple is computed as follows:

$$\frac{D}{PIC}$$

Where:

D = distributions

PIC (Paid in capital) = cumulative capital contributed to the vehicle

Distributions retained in the vehicle and not paid to the investors are considered as realised.

Residual value to paid in capital multiple (RVPI)

The RVPI, residual value to paid in capital multiple, also known as the unrealised multiple is computed as follows:

$$\frac{RV}{PIC}$$

Where:

RV (Residual value) = net asset value (NAV) of the vehicle

PIC (Paid in capital) = cumulative capital contributed to the vehicle

Arithmetic mean

The arithmetic mean represents the average IRR for vehicles of the same vintage on an equally weighted basis by taking the individual IRRs of each vehicle and then computing the arithmetic mean of these vehicles.

The arithmetic mean IRR Index per vintage is computed as follows:

$$\frac{1}{m_j} \sum_{i=1}^{m_j} IRR_i$$

Where:

IRR_i is the IRR for vehicle i

m_j is the number of vehicles for vintage j

Total value to paid in capital multiple (TVPI)

The TVPI, total value to paid in capital multiple, also known as the investment multiple is computed as follows:

$$\frac{TV}{PIC}$$

Where:

TV (Total value) = sum of residual vehicle net assets (NAV) plus aggregate vehicle distributions

PIC (Paid in capital) = cumulative capital contributed to the vehicle

IRR Index - index methodology

Currency conversion

To calculate aggregate / pooled returns, a local currency methodology is used to remove the impact of currency fluctuations. All non-euro cashflows are converted into the EUR base currency, to weight the Index. The NAV and all cash flows are converted into EUR using the currency conversion rate prevailing on the first day of the reporting quarter thereby eliminating all currency movements during the entirety of the cash-flow series.

For more information visit the [INREV Guidelines on Performance Measurement](#).



SECTION 5



German Vehicles Index

German Vehicles Index - introduction

Introduction

The [German Vehicles Index](#) measures net asset value performance of non-listed real estate vehicles domiciled in Germany, regardless of regional strategy. Performance is measured net of fees and other costs.

The Index was launched in 2016 along with an accompanying Index analysis tool. The Index is supported by the BVI, the German Investment Funds Association. The Index is published on the first Wednesday of May each year. The history of the Index starts at 2001.

The German Vehicles index is an unfrozen index which means that historical data can change with future updates.

Data collection

The Index results are based on vehicle level data that is provided to INREV directly from managers.

Annual data collection starts immediately after a year has ended for a period of up to 12 weeks after year end

Quarterly data collection starts immediately after a quarter has ended for a period of up to 6 weeks after quarter end

The Annual Index includes annually, bi-annually and quarterly valued funds

INREV encourages managers to deliver data via the [INREV Data Platform](#).

Publication and accompaniments

The Quarterly German Vehicles Index will be released 9 weeks after quarter end and the Annual German Vehicles Index will be released 14 weeks after quarter end.

The publications include:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members
- An [Analytical Tool](#) to carry out detailed analysis

Confidentiality

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

German Vehicles Index - index specification

Inclusion criteria

- Vehicles domiciled in Germany only
- Vehicles targeting retail and/or institutional investors
- All styles are included, core, value added and opportunity
- All vehicle types are included, funds, separate accounts, joint ventures and club deals
- The Annual Index includes annually, bi-annually and quarterly valued vehicles
- The Quarterly Index includes quarterly valued vehicles only

Classification

Styles are self-defined by the manager.

The Germany Vehicles Index includes vehicles that have a German regional strategy.

The Europe Vehicles Index includes vehicles that have a European regional strategy.

The Europe Vehicles Index – ex Germany includes vehicles that have a European regional strategy but excludes those that have a German regional strategy.

The Global Vehicles Index includes vehicles that have a global regional strategy.

The Multi-sector Index includes vehicles that have a strategy to invest in more than one sector.

Performance calculation

The Modified Dietz methodology is used to calculate quarterly net asset value fund performance.

The total return measures the performance over a specific period and does not include projections to the end of the fund's life.

The total return is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions + distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The capital growth is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The distributed income return is computed as follows:

$$\frac{\sum distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

NAV_t – net asset value at time t (end of period)

NAV_{t-1} – net asset value at time t-1 (end of the previous period)

TwdC – time weighted (daily) contributions over the period

TwdD – time weighted (daily) distributions over the period

TwdR – time weighted (daily) redemptions over the period

In the case of the Annual index, year-on-year performance is calculated using the Modified Dietz methodology for the year. All multi-period returns are calculated using annual chain-linked performance data.

In the case of the Quarterly index, the annual and other multi-period returns are calculated using quarterly chain-linked performance data.

The index results are calculated on a pooled return basis.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#).



SECTION 6



Asset Level Index

Asset Level Index - introduction

Introduction

The [Asset Level Index](#) measures the performance of direct real estate assets across Europe in all property sectors after deducting asset level operating expenses.

Performance is calculated using a chain-linked methodology and excludes the impact of leverage and vehicle level costs and fund level fees.

The Asset Level Index consultation was released in April 2019 and is published 12 weeks after year end. The index has an inception year of 2014.

The INREV Asset Level Index is an unfrozen index which means that historical data can change with future updates.

Data collection

The Index results are based on asset level data that is provided to INREV directly by managers and investors.

Quarterly data collection starts immediately after a quarter has ended for a period of up to 8 weeks after quarter end.

Annual data collection starts immediately after a year has ended for a period of up to 10 weeks after year end. The Annual Index includes annually, bi-annually and quarterly data provisions.

INREV encourages managers and investors to deliver data via the [INREV Data Platform](#).

Publication and accompaniments

The Quarterly Asset Level Index will be released 10 weeks after quarter end and the Annual Asset Level Index will be released 12 weeks after quarter end.

The publications include:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members
- An [Analytical Tool](#) to carry out detailed analysis (including enhanced exports to enable contribution and attribution analysis) The full version of this tool is only available to all investor members and data contributing investment manager members

Asset Level Index – index specification

Data delivery

Data must be provided using the asset level index data delivery template and via the [INREV Data Platform](#). Definitions of all data fields can be found in the data delivery template which can be retrieved from the platform.

Frequency of data

Asset level data can be delivered on a monthly, quarterly, semi-annual and annual basis.

Data delivery in reporting currency

Data for each asset needs to be reported in the currency of the country where the asset is located.

Quarterly index

Only assets that are reported on a monthly or quarterly basis can be included in the quarterly index.

Annual index

Assets that are reported on a monthly, quarterly, semi-annual and annual basis are included in the annual index.

Index inclusion criteria

The INREV Asset Level Index includes the following assets:

- Located in Europe
- All asset types and sub-types
- All life-cycle stages
- All types of valuation approaches
- All accounting standards

Confidentiality

Performance for any index or sub-index is reported only when the sample includes at least 3 assets from 3 different companies and no single company accounts for more than 60% of the sample, when measured by market value.

Asset Level Index – index specification

Monthly chain-linking

INREV uses a monthly chain linked methodology to calculate quarterly and annual asset, portfolio and index level returns (a portfolio refers to a collection of assets).

Data may be provided on a monthly, quarterly, semi-annual or annual basis. In the case of non-monthly data, monthly values will be interpolated.

Calculation of monthly NOI and CAPEX

Quarterly NOI and CAPEX figures are equally distributed to each month based on the number of days an asset is owned during that month.

Monthly asset value estimation

The monthly value of each asset is calculated by taking the beginning and the end of the period market values and evenly distributing value change to each month. If any capex, partial acquisitions and/or dispositions take place during the period, those are used to adjust the value of the assets in the month when they happen.

Monthly asset level performance calculation

The following formulas are used to estimate monthly total return, income return and capital return for each asset if they are not provided.

$$TR_{m_k} = \frac{MV_{k_m} - MV_{k_{m-1}} + \sum D_{k_m} - \sum A_{k_m} - CAPEX_{k_m} + NOI_{k_m}}{MV_{k_{m-1}} + \sum A_{k_m} + CAPEX_{k_m}}$$

$$IR_{m_k} = \frac{NOI_{k_m}}{MV_{k_{m-1}} + \sum A_{k_m} + CAPEX_{k_m}}$$

$$CG_{m_k} = \frac{MV_{k_m} - MV_{k_{m-1}} + \sum D_{k_m} - \sum A_{k_m} - CAPEX_{k_m}}{MV_{k_{m-1}} + \sum A_{k_m} + CAPEX_{k_m}}$$

Where:

TR_m - monthly total return

IR_m - monthly income return

CG_m - monthly capital growth

MV_{k_m} - market value at the end of the month

$MV_{k_{m-1}}$ - market value at the beginning of the month

NOI_k - monthly net operating income

$CAPEX_k$ - monthly capital expenditure

D_k - monthly dispositions

A_k - monthly acquisitions

m - month

k - asset

Quarterly asset level chain-linking

Monthly returns are chain-linked to calculate the quarterly returns using the following formula. The same methodology applies to the calculation of the quarterly capital growth and quarterly income return.

$$TR_Q = (1 + TR_{m_1}) * (1 + TR_{m_2}) * (1 + TR_{m_3}) - 1$$

Asset Level Index – index specification

Currency conversion

To calculate aggregate returns, a local currency methodology is used. This means that all asset level indices and portfolio returns do not take currency fluctuations into account. To remove the effect of currency fluctuations the monthly values that are reported in currencies other than the EUR are converted using the first day of the month exchange rate.

Index and portfolio aggregation

Monthly aggregate portfolio and index returns are calculated using the following formula.

$$TR^p = \frac{\sum(N^{a^1}, N^{a^2}, N^{a^2}, \dots)}{\sum(D^{a^1}, D^{a^2}, D^{a^2}, \dots)}$$

Monthly portfolio and index returns are chain-linked to calculate quarterly performance using the formula from the previous page.



GLOBAL INDICES

'NREV



SECTION 7

Global Real Estate Funds Index
(GREFI)

GREFI - introduction

Introduction

The [Global Real Estate Funds Index \(GREFI\)](#) measures net asset value performance of non-listed real estate funds on a quarterly basis. Performance is measured net of fees and other costs, and represents the aggregate investor return.

The Index was launched in 2014 and is published 12 weeks after quarter end. The GREFI is an unfrozen index which means that historical data can change with future updates. The history of GREFI starts at Q1 2005.

Data collection

The Index results are based on fund level data that is provided to ANREV, INREV and NCREIF directly from managers.

ANREV, INREV and NCREIF do not use publicly available information, and both members and non-members can provide data for the Index.

Publication and accompaniments

The GREFI publication includes:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members

GREFI - index specification

Inclusion criteria

- All funds included in the ANREV Quarterly Index – core, value added and opportunity
- All funds included in the INREV Quarterly Index – core and value added
- US core funds – NCREIF Fund Index Open End Diversified Core Equity, NFI – ODCE
- US non-core funds – NCREIF Fund Index Open End, NFI – OE and NCREIF Fund Index Quarterly valued funds
- Global strategy funds targeting >2 investors and a >50% institutional holding.
- The index includes quarterly valued funds only

Classification

ANREV and INREV styles are self-defined by the manager.

Asia Pacific non-core funds include value added and opportunity funds.

European non-core funds include value added funds only.

US non-core funds include open end funds that are not included in NFI – ODCE and NFI – OE.

Performance calculation

The Modified Dietz methodology is used to calculate net asset value fund performance.

The total return measures the performance over a specific period and does not include projections to the end of the fund's life.

The total return is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - \text{contributions} + \text{redemptions} + \text{distributions}}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

NAV_t – net asset value at time t (end of quarter)

NAV_{t-1} – net asset value at time t-1 (end of the previous quarter)

TwdC – time weighted (daily) contributions over the quarter

TwdD – time weighted (daily) distributions over the quarter

TwdR – time weighted (daily) redemptions over the quarter

The performance for ANREV and INREV funds are calculated from underlying cash flows, while NCREIF funds are based on numerators and denominators provided to NCREIF in compliance with the NCREIF / PREA Reporting Standards Handbook.

Multi-period returns are calculated using chain-linked performance data.

The index results are calculated on a pooled return basis.

Currency conversion

To calculate aggregate returns, a local currency methodology is used to remove the impact of currency fluctuations. All non-euro cashflows are converted into the USD base currency, to weight the Index. The NAV and capital flows are converted into USD using the currency conversion rate prevailing on the first day of the quarter thereby eliminating any currency movements during the quarter.

Guidelines

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#) and the [NCREIF / PREA Reporting Standards Handbook Volume I](#) and [Volume II](#).



Section 8

Global ODCE Index

Global ODCE Index - introduction

Introduction

The [Global ODCE Index](#) measures the quarterly net asset value performance of open end, core funds invested across Asia Pacific, Europe and the US and diversified across multiple sectors. The index has been compiled from data collected by ANREV, INREV and NCREIF for their ODCE indices.

At its launch in Q2 2023 the index measured the performance of 50 funds, 8 from Asia-Pacific, 16 from Europe and 26 from the US, on an equally weighted basis. The combined total GAV was \$403 billion.

Initially, performance is measured net of fees and costs. However, there is a near term ambition to report gross of fees performance.

The first publication of the Index was launched as a consultation release in July 2023 and will be published 10 weeks after quarter end. The Global ODCE Index is an unfrozen index which means that historical data can change with future updates. The Index has an inception date of Q2 2016.

The Global ODCE Index reflects the growing need for data on a worldwide scale as investor appetite for globally diversified real estate portfolios gathers momentum. It will aid the understanding of the global real estate market with a clear core peer-set for all three regions. The new index will advance the pool of available data and grow transparency, helping to accelerate capital flows into the asset class.

Inclusion criteria

- All funds included in the ANREV ODCE Index
- All funds included in the INREV ODCE Index
- All funds included in the NCREIF Fund Index Open End Diversified Core Equity. NFI - ODCE

Confidentiality thresholds

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

Publication and accompaniments

The Global ODCE Index publication includes:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members

Global ODCE Index - Index methodology

Performance calculation

The Modified Dietz methodology is used to calculate quarterly net asset value fund performance.

The total return measures the performance over a specific period and does not include projections to the end of the fund's life.

The total return is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions + distributions}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The distributed income return is computed as follows:

$$\frac{\sum Net\ investment\ income}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

The capital growth is computed as follows:

$$\frac{NAV_t - NAV_{t-1} - contributions + redemptions + distributions - (\sum Net\ investment\ income)}{NAV_{t-1} + TwdC - TwdR - TwdD}$$

NAV_t – net asset value at time t (end of quarter)

NAV_{t-1} – net asset value at time t-1 (beginning of quarter)

TwdC – time weighted (daily) contributions over the quarter

TwdD – time weighted (daily) distributions over the quarter

TwdR – time weighted (daily) redemptions over the quarter

Annual and other multi-period returns are calculated using quarterly chain-linked performance data.

Methodology

Regional performance is calculated by aggregating vehicle performance on a value weighted basis.

However, the performance of the Global ODCE index aggregates the three regional indices on an equally weighted basis (i.e. mean average).

Currency conversion

The reporting currency for ANREV and NCREIF is USD whilst the reporting currency for INREV is Eur.

For the calculation of Returns in USD all INREV NAVs and cashflows are converted into USD using the currency conversion rate prevailing on the first day of the quarter thereby eliminating any currency movements during the quarter.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#).



Section 9

Global IRR Index

Global IRR Index - introduction

Introduction

The [Global IRR Index](#) measures the since inception internal rate of return performance of Asian-Pacific, European and US closed end non-listed real estate vehicles. Performance is measured net of fees and costs.

The Index results are based on vehicle level data that is provided to ANREV, INREV and NCREIF directly from managers.

The Global IRR Index is computed on both a pooled return basis and an equally weighted basis (arithmetic mean).

The first Global IRR Quarterly Index was published in January 2020 and is published 14 weeks after quarter end with exception of the Q4 publication, which is published 16 weeks after quarter end.

The Global IRR Index is an unfrozen index which means that historical data can change with future updates. Any funds that are unable to meet the data reporting deadlines will be included in the next index release. In the case of funds reporting with a lag the latest available NAV is used for the IRR calculations.

Publication and accompaniments

The Global IRR Index publication includes:

- A PDF publication with a supplementary Excel workbook
- A PDF and Excel snapshot that is also available to non-members

Global IRR Index - index specification

Inclusion criteria

- All value added and opportunity funds included in the ANREV IRR Index.
- All value added and opportunity funds included in the INREV IRR Index.
- US closed end funds
- Only vehicles that have provided full cash flows (capital calls, redemptions and distributions) since inception Closed end vehicles
- Vehicles targeting institutional investors only
- Non-core manager defined value added and opportunity strategies
- All types of vehicle are included i.e. funds, separate accounts, joint ventures and club deals
- Quarterly valued vehicles

Classification

Year of first closing is used as a proxy for vintage year and is provided by the manager.

The Multi-country Index includes vehicles that have a strategy to invest in more than one country.

The Multi-sector Index includes vehicles that have a strategy to invest in more than one sector.

Confidentiality thresholds

Performance is shown only when the sample size includes at least 3 vehicles from 3 different managers.

Quartiles and the interquartile range are displayed only when the sample size includes 8 or more vehicles from 3 different managers.

Performance is included only when a vehicle has at least 5 quarters of cash flows submitted to the platform.

Global IRR Index - index methodology

Performance calculation

The IRR, internal rate of return, is also known as a money-weighted return.

The since inception IRR (SI-IRR) for each vehicle is computed as follows:

$$f_0 + \frac{f_1}{(1+IRR)} + \frac{f_2}{(1+IRR)^2} + \frac{f_3}{(1+IRR)^3} + \dots + \frac{f_n}{(1+IRR)^n} = 0$$

Where:

$f_0 \dots f_n$ denotes the cash flows for the period 0 through to period n (positive values for inflows and negative values for outflows)

Pooled return

The pooled return represents the weighted average IRR by pooling the cash flows of all vehicles of the same vintage.

The pooled return IRR Index per vintage is computed as follows:

$$f_0 + \frac{f_1}{(1+IRR)} + \frac{f_2}{(1+IRR)^2} + \frac{f_3}{(1+IRR)^3} + \dots + \frac{f_n}{(1+IRR)^n} = 0$$

Where:

$f_0 \dots f_n$ denotes the cash flows for all vehicles of the same vintage over the period 0 through to period n (positive values for inflows and negative values for outflows)

Arithmetic mean

The arithmetic mean represents the average IRR for vehicles of the same vintage on an equally weighted basis by taking the individual IRRs of each vehicle and then computing the arithmetic mean of these vehicles.

The arithmetic mean IRR Index per vintage is computed as follows:

$$\frac{1}{m_j} \sum_{i=1}^{m_j} IRR_i$$

Where:

IRR_i is the IRR for vehicle i

m_j is the number of vehicles for vintage j

Total value to paid in capital multiple (TVPI)

The TVPI, total value to paid in capital multiple, also known as the investment multiple is computed as follows:

$$\frac{TV}{PIC}$$

Where:

TV (Total value) = sum of residual vehicle net assets (NAV) plus aggregate vehicle distributions

PIC (Paid in capital) = cumulative capital contributed to the vehicle

Currency conversion

To calculate aggregate / pooled returns, a local currency methodology is used to remove the impact of currency fluctuations. All non-USD cashflows are converted into the USD base currency, to weight the Index. The NAV and all cash flows are converted into USD using the currency conversion rate prevailing on the first day of the reporting quarter thereby eliminating all currency movements during the entirety of the cash-flow series.

For more information about Performance Measurement visit the [INREV Guidelines on Performance Measurement](#) and the [NCREIF / PREA Reporting Standards Handbook Volume I and Volume II](#).



Appendix 1

Summary of key characteristics

Key characteristics (1/2)

	INREV Annual Index	INREV Quarterly Index	GREFI	German Vehicles Annual Index	German Vehicles Quarterly Index
Launched	2005	2011	2014	2016	2016
Publication	Last Wed of April	8 weeks after quarter end	12 weeks after quarter end	1 st Wed in May	9 weeks after quarter end
Frozen / unfrozen	Unfrozen	Unfrozen	Unfrozen	Unfrozen	Unfrozen
History from	2001	Q2 2000	Q1 2005	2001	Q2 2000
Collection method	Data Platform	Data Platform	Data Platform	Data Platform	Data Platform
Corresponding tool	Index Analysis Tool	Index Analysis Tool		Index Analysis Tool	Index Analysis Tool
Excel supplement	Yes	Yes	Yes	Yes	Yes
Snapshot	Yes	Yes	Yes	Yes	Yes

Key characteristics (2/2)

	IRR Quarterly Index	European ODCE Quarterly Index	Asset Level Annual Index	Asset Level Quarterly Index	Global IRR Index	Global ODCE Index
Launched	2018	2019	2019	2019	2020	2023
Publication	9 weeks after quarter end	8 weeks after quarter end	12 weeks after year end	10 weeks after quarter end	14 weeks after quarter end	10 weeks after quarter end
Frozen / unfrozen	Unfrozen	Unfrozen	Unfrozen	Unfrozen	Unfrozen	Unfrozen
History from	Based on vintages	Q3 2011	2014	Q4 2013	Based on vintages	Q2 2016
Collection method	Data Platform	Data Platform	Asset Level Data Input Tool	Asset Level Data Input Tool	Data Platform	Data Platform
Corresponding tool	Index Analysis Tool	Index Analysis Tool	Asset Level Analysis Tool	Asset Level Analysis Tool		
Excel supplement	Yes	Yes	Yes	Yes	Yes	Yes
Snapshot	Yes	Yes	Yes	Yes	Yes	Yes



Appendix 2

Summary of eligibility criteria

Eligibility criteria for Fund Indices (1/2)

	INREV Annual Index	INREV Quarterly Index	GREFI	German Vehicles Annual Index	German Vehicles Quarterly Index
Vehicle type	Funds	Funds	Funds	Funds Separate accounts Joint ventures Club deals	Funds Separate accounts Joint ventures Club deals
Style	Core Value added	Core Value added	Core Value added Opportunistic (APAC and US only)	Core Value added Opportunity	Core Value added Opportunity
Structure	Open end Closed end	Open end Closed end	Open end Closed end	Open end Closed end	Open end Closed end
Investor type	> 50% institutional	> 50% institutional	> 50% institutional	Retail, Institutional	Retail, Institutional
Number of investors	> 2	> 2	> 2		
Investment type					
Geography	> 90% of GAV targeting Europe	> 90% of GAV targeting Europe	All geographies	All geographies	All geographies
Sector	All sectors	All sectors	All sectors	All sectors	All sectors
LTV					
Reporting dates	31 Dec	31 Mar 30 Jun 30 Sep 31 Dec	31 Mar 30 Jun 30 Sep 31 Dec	31 Dec	31 Mar 30 Jun 30 Sep 31 Dec
Minimum data required	One year	One quarter	One quarter	One year	One quarter
Minimum requirement	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers

Eligibility criteria for Fund Indices (2/2)

	IRR Quarterly Index	European ODCE Quarterly Index	Global IRR Index	Global ODCE Index
Vehicle type	Funds Separate accounts Joint ventures Club deals	Funds	Funds Separate accounts Joint ventures Club deals	Funds
Style	Core Value added Opportunity	Core	Value added Opportunity	Core
Structure	Closed end	Open end	Closed end	Open end
Investor type	> 50% institutional	> 50% institutional	> 50% institutional	> 50% institutional
Number of investors	> 2	> 2	> 2	>2
Investment type				
Geography	> 90% of GAV targeting Europe	> 90% of GAV targeting Europe < 65% of GAV in a single country	All Geographies	Diversified based on the respective regional criteria
Sector	All sectors	> 80% in office, industrial, retail, and residential < 65% of GAV in a single sector	All sectors	Diversified based on the respective regional criteria
LTV		≤ 40% leverage		
Reporting dates	31 Mar 30 Jun 30 Sep 31 Dec	31 Mar 30 Jun 30 Sep 31 Dec	31 Mar 30 Jun 30 Sep 31 Dec	31 Mar 30 Jun 30 Sep 31 Dec
Minimum data required	Five quarters	One quarter	Five quarters	One quarter
Minimum requirement	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers	At least 3 funds by 3 different managers