



Annual Market Review and Developers' Research Benchmark

December
2022

December Overview

During December 2022, the FTSE EPRA Nareit (FEN) Global Developed Real Estate Index posted a negative monthly return of 6.1%, global bonds and equities also lost 3.5% and 8.1%, respectively. Meanwhile, the FEN Emerging Index returned a negative 4.1%, and emerging equities and bonds also lost 4.5% and 3.3%, respectively.

Focusing on regional and sector performance, all regions and sectors posted negative monthly returns: Europe (-1.5%) Asia (-1.8%) and North America (-8.3%). Industrial/office (-1.4%) and diversified (-1.9%) were top performers with still negative but limited returns, while lodging/resorts (-11.7%) and data centres (-9.9%) were bottom performers. The annual performance overview is given in the '2022 Performance: Global Overview' section.

EPRA Developers Research Benchmark

The **EPRA Developers Research Benchmark** is a non-commercial benchmark designed to allow its constituents to assess themselves against each other. The benchmark now has a total of 28 constituents from 11 different countries in Developed Europe (17 out of the UK) and an aggregated full market cap of **EUR 37,811 million** (30/12/2022). A high-level computation can be found in the relevant section (page 11).

2022 Highlights

Geopolitical tensions, energy crisis, rising inflation and interest rates

The impact of Covid-19 pandemic had started to fade away, but it was replaced by the Ukraine - Russia war in 2022. The heightened uncertainty and geopolitical risks put additional pressures on consumer and business confidence especially in Europe, which were among the most exposed advanced economies, due to its geographical proximity to the war and heavy reliance on gas imports from Russia. In fact, the main economic threat was higher energy prices, which fuelled inflationary pressures and reduced economic growth. It prompted central banks to make aggressive interest rate hikes in 2022.

A slowdown in economic growth has already started to be observed, but the GDP growth is expected to be 3.2% in 2022 thanks to strong first half of the year. However, the contraction of economic activity is set to continue in Q1 - 2023 with the erosion of households' purchasing power and tighter financing conditions. The inflation exceeded 10% and reached all-time high in Eurozone (10.6% in October). Even though it started to decline slightly in the last months of the year, annual inflation projection is 8.5% in the euro area and is expected to remain high at 6.1% in 2023, before moderating in 2024 close to target level at 2.0% (Fig.1).

To tackle inflation, first the Bank of England (BoE) raised its interest rate by 25bp in February (for the first time since 2004), and later the ECB started series of interest rate rises in July, for the first time in 11 years (Fig.2). The ECB and BoE have continued to tighten monetary policy in response to inflationary pressures and to maintain pace with other global central banks. At their December meetings, the ECB raised the refinancing rate to 2.5%, whilst the BoE hiked policy rate to 3.5%, and further hikes are expected in the forthcoming period to meet the 2.0% inflation target helps to sustain growth and employment depending on inflation expectations.

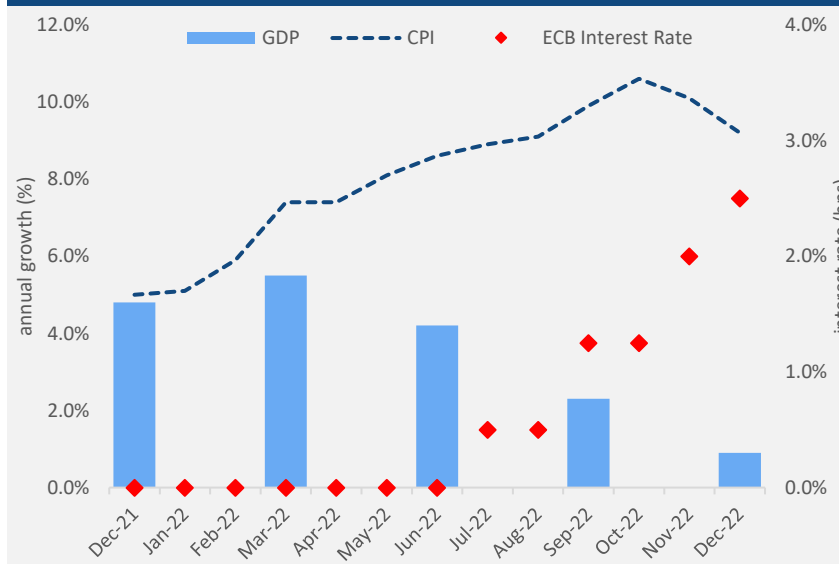
(To read EPRA's special report [Interest rates and inflation : What are the challenges for listed real estate?](#)).

FTSE EPRA Nareit Global Index Total Return

% Total Returns (EUR)	Dec-22	1 yr	3 yrs*	5 yrs*	10 yrs*
Global Real Estate	▼ -6.1	-19.5	-2.4	3.1	6.1
Global Equities (FTSE)	▼ -8.1	-9.9	7.3	5.3	9.2
Global Bonds (JP Morgan)	▼ -3.5	-11.9	-3.7	1.5	2.1
Europe Real Estate	▼ -1.5	-36.5	-12.2	-4.2	3.8
Europe Equities (FTSE)	▼ -2.5	-10.1	3.0	4.2	7.3
Europe Bonds (JP Morgan)	▼ -7.9	-14.2	-4.9	-0.1	3.0
Asia Real Estate	▼ -1.8	-5.1	-3.9	1.9	3.7
Asia Equities (FTSE)	▼ -5.9	-3.5	5.1	5.3	9.9
Asia Bonds (JP Morgan)	▼ -4.9	-0.5	-1.0	1.7	3.1
North America Real Estate	▼ -8.3	-19.9	0.6	5.4	7.9
NA Equities (FTSE)	▼ -9.3	-13.6	9.1	11.7	14.5
NA Bonds (JP Morgan)	▼ -4.4	-6.5	-0.9	2.4	2.8
Emerging Real Estate	▼ -4.1	-6.7	-12.8	-4.3	1.6
Emerging Equities (FTSE)	▼ -4.5	-11.7	0.2	2.5	4.5
Emerging Bonds (JP Morgan)	▼ -3.3	-11.2	-3.0	1.3	3.5

(*) Annualised.

Fig. 1. Eurozone : Main economic indicators



Source: EPRA Research. Compiled from Eurostat. ECB (as of 30/12/2022).

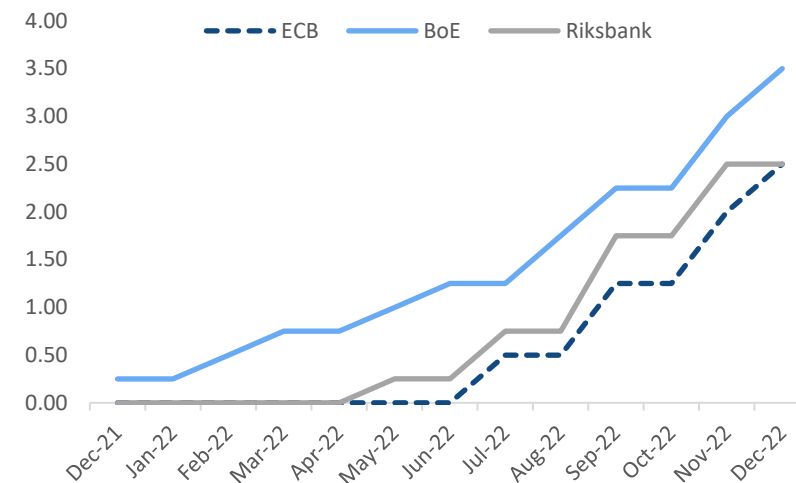
Macro-economic environment has changed dramatically throughout 2022, and the increasing uncertainty has led to volatility in the bond and equity markets (Fig.3). It was challenging for the LRE sector with the potential implications for the market and how companies and investors can position themselves. (to read EPRA's special report [LRE valuation : A close look at ratios, cash flows and portfolio allocation](#))

Relevant to increasing interest rates, companies have concerns on financing cost, but they have healthier balance sheets compared to the GFC and Eurozone debt crisis, thanks to historically lower leverage levels which was 36.8% as of end of December. In addition, the vast number of European listed property companies have less outstanding debt on their balance sheet and around 85% of total outstanding debt are contracted at fixed interest rates giving them some comfort in the short to mid-term. Similarly, inflation-adjusted rents provide sustainable income which can lead to partial protection against rising inflation.

The economic outlook for Europe still remains challenging, financial markets expect further increases to come and rates to peak in 2023. Central banks stated that they are not done yet with rate rises and more expected in 2023, along with a mild recession in the economy.

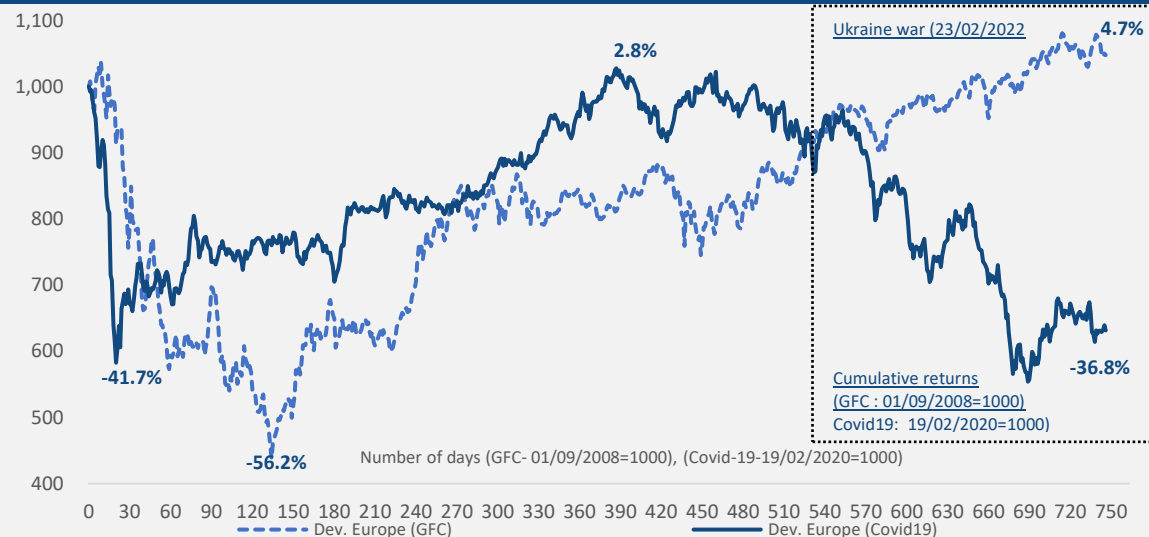
The impact of turbulences and recovery patterns differ by sectors. After the pandemic, growing e-commerce or working from home trend caused structural shifts on retail and office sector and therefore their business models. Certain sectors are more sensitive to a hike in energy costs, in particular logistics due to increasing shipping cost and residential with rising living costs, so they are more exposed to the energy crisis. More details are given in 'Sector Performance' section.

Fig. 2. Europe : The policy rates



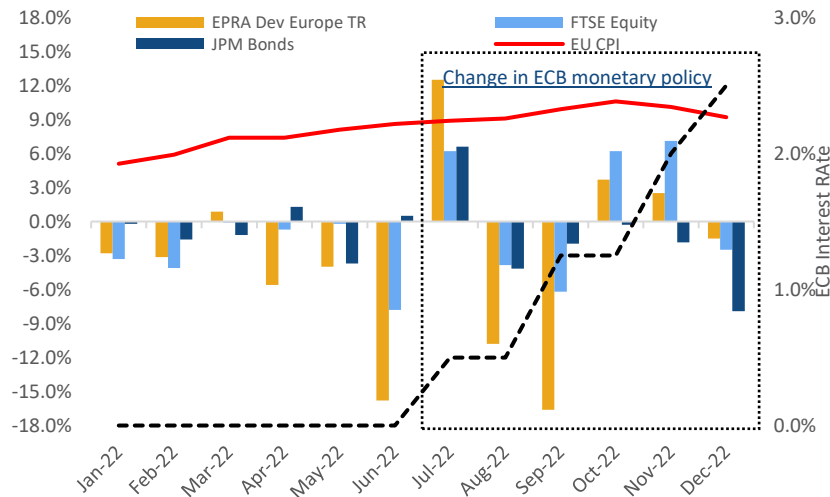
Source: EPRA Research. Data is compiled from the ECB, BoE and Riksbank.

Fig. 4. Developed Europe: cumulative total returns (GFC vs Covid-19)



Source: EPRA Research. Data is compiled from the FEN Index (as of 30/12/2022).

Fig. 3. Europe : Interest rate, CPI, Total return for Real Estate, Equity and bonds



Source: EPRA Research, the FEN Index series, ECB, Eurostat, Bloomberg (as of 30/12/2022).

Note : Interest rate is given in the right axis.

Sector Performance : Developed Europe

In terms of the FEN Developed Europe's sector indices, 2022 was a tough year, all sectors posted negative annual returns, especially resilient sectors during Covid-19: residential (-48.5%) and industrial (-45.9%) lost momentum as bottom performers. The most hit sector during pandemic, retail (-9.4%) returned negative but relatively limited, as top performer. Based on cumulative return (since 19/02/2020), self-storage (1.6%) is the only sector to be traded above its pre-crisis level (Table 1).

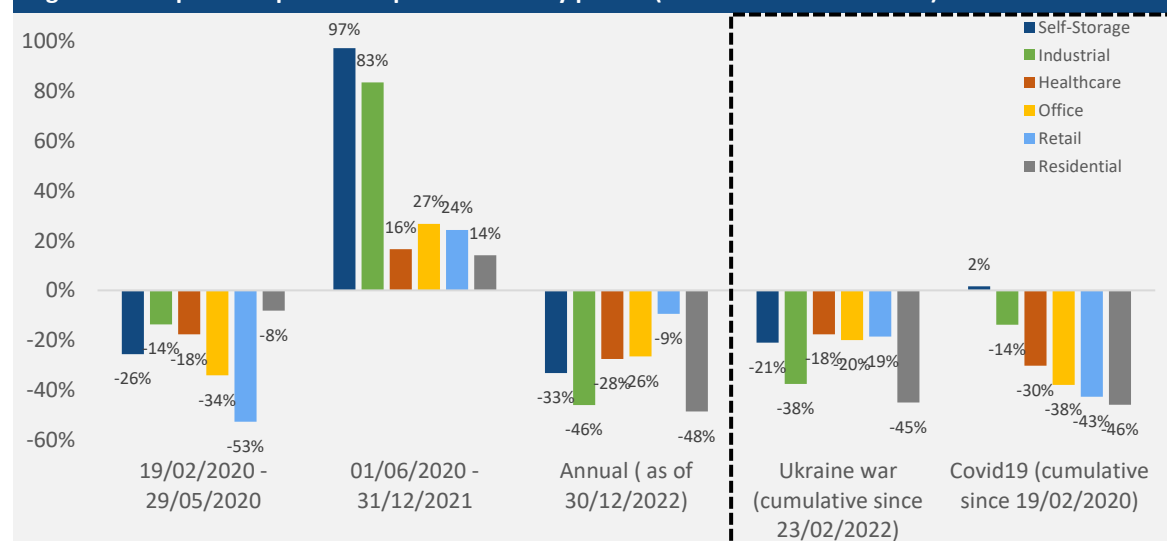
Focusing on P/D to NAV figures, the European average is standing at -44.3% (as end of December) and at -17.1% for 5-year average. Self-storage (40.6%) is the only sector trading at premiums to NAV as end of 2022. In terms of 5-year average, self-storage (37.7), healthcare (24.2%) and industrial (13.0%) are trading above the 5-year average levels (Fig. 4). The hardest-hit sectors by Covid-19, retail (-47.8%) and lodging/resorts (-40.8%) are still trading at discounts to NAV, but with better figures compared to March-20, however the remaining sectors are trading below their March-20 levels (for more information you can read [EPRA NAV Bulletin](#)).

Capital raising in Europe

The listed real estate companies in Europe raised EUR 14.15 billion (EUR 10.98 bln debt and EUR 3.17 bln equity) in new fresh capital during 2022.

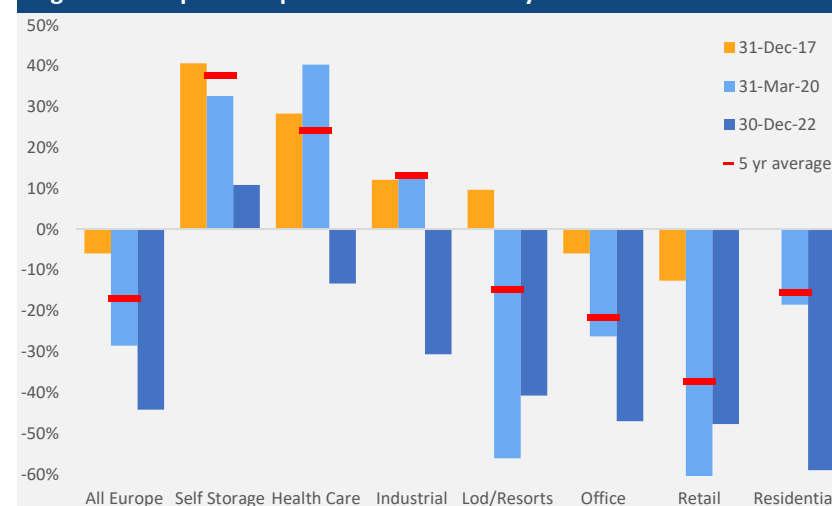
Green bond issuance in the listed real estate sector continued to grow and a total of EUR 7.0 billion of green bonds have been issued by EPRA constituents in 2022. It represents 21% of total green bonds issuance since 2013 which is a total of EUR 33.5 billion (for more information you can read [EPRA LTV Monitor January 2023](#)).

Fig. 5. Developed Europe: Sector performance by period (cumulative total returns)



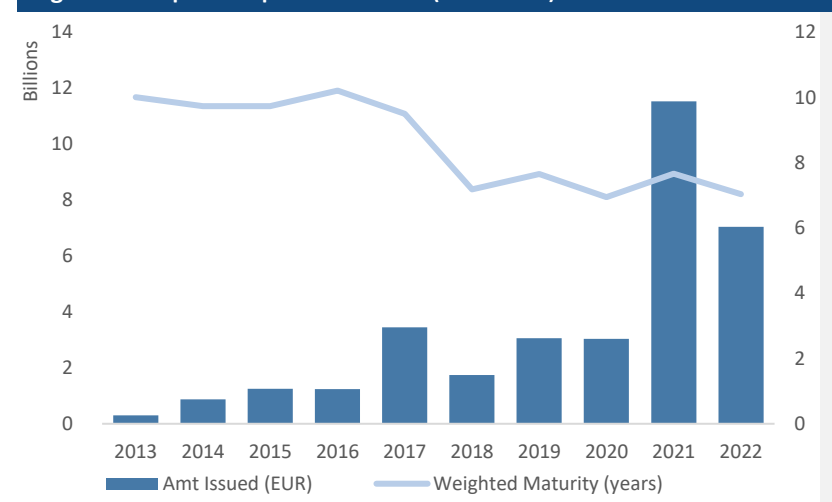
Source: EPRA Research. Data is compiled from the FEN Index (as of 30/12/2022)

Fig. 6. Developed Europe: Discount to NAV by Sector



Source: EPRA. (*) Starting from March 2021, the aggregated PD is computed using the simple average of the new 3 EPRA NAV metrics (NRV, NTA, NRV), the average has been retrospectively applied since 2020, depending on the companies information availability.

Fig. 7. Developed Europe: Green Bonds (EUR billion) Green bond



Source: EPRA LTV Monitor. Data is compiled from S&P, Bloomberg (as of 30/12/2022).

2022 Performance: Global overview

The FEN Global Developed Real Estate index posted negative annual return of 19.5% compared to loss of 9.9% and 11.9 from global equities and global bonds, respectively. Based on cumulative return (since 19/02/2020), it is still traded below pre-Covid19 level with negative return of 13.5%. Annualised ten-year rolling returns for real estate investments stand at 6.1%, while general equities posted an 9.2% return and bonds gained 2.1% during the same period.

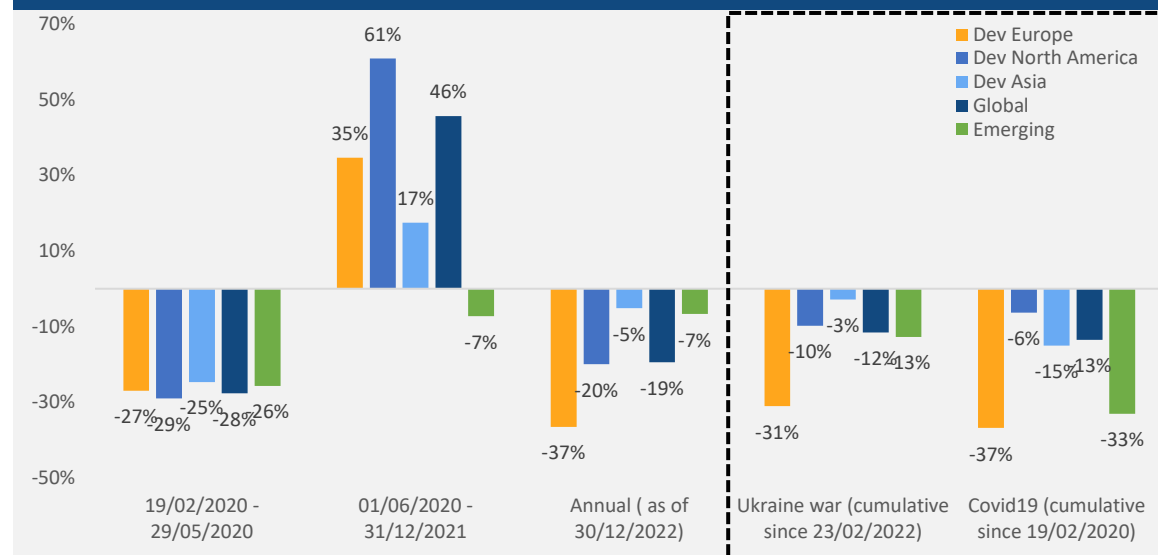
In terms of regional performance, all regions posted negative annual returns: Europe (-36.5%), North America (-19.9%) and Asia (-5.1%) and are performing below their pre-pandemic levels (Fig.8 and 9).

The top performing countries in Developed markets were Hong Kong (7.3%) and Singapore (35 bps) in Asia and the remaining countries posted negative annual returns.

Focusing on annual performance by sector, specialty (13.0%) was outperformer and the remaining sectors returned negative which residential (-31.4%), industrial (-27.4%), industrial/office (-27.4%) and office (-26.7%) were bottom performers with higher negative annual returns, followed by data centres (-23.2%), self-storage (-22.5%) and healthcare (-17.9%). The most hit sector during pandemic, retail (-7.2%) and lodging/resorts (-5.8%) gained some ground during 2022 providing relatively lower negative annual returns (Fig.10).

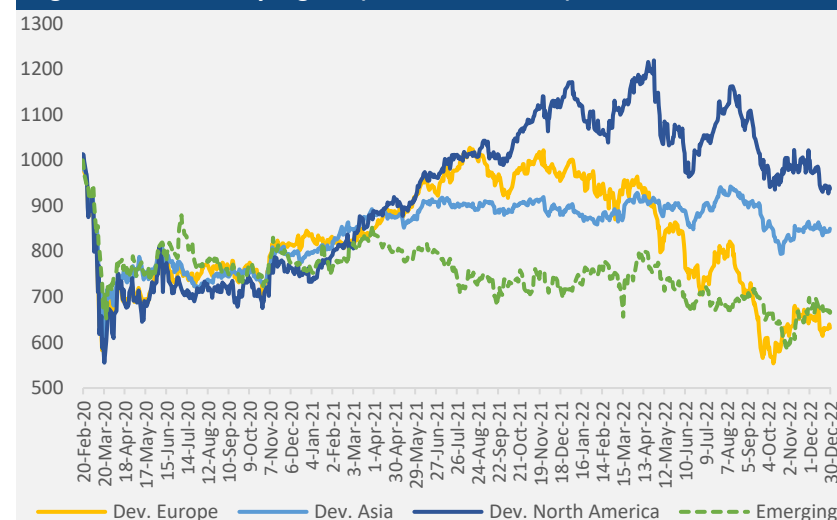
At the end of December 2022, the **FEN Developed Index** counted a total of **381** constituents, representing a free float market capitalisation of around **EUR 1,4 trillion**.

Fig. 8. Global Developed: Regional Performance by period (cumulative total returns)



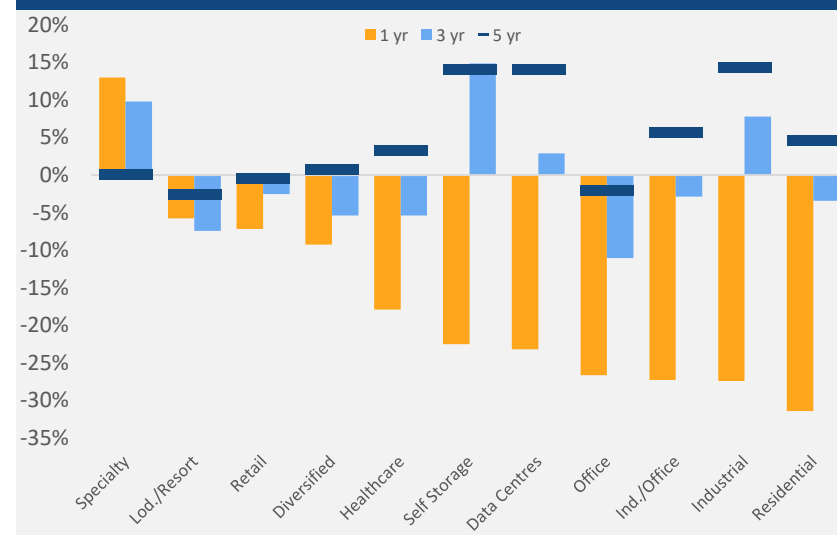
Source: EPRA Research. Data is compiled from the FEN Index (as of 30/12/2022).

Fig. 9. Total return by region: (31/12/2019=1000)



Source: EPRA Research. Data is compiled from the FEN Index (as of 30/12/2022).

Fig. 10. Global Developed: Total return by sector



Source: EPRA (as of 30/12/2022). (*) Annualised.

Major Corporate Actions in the FEN Developed Index in 2022

- *Primaris REIT* (Canada, Non-constituent) was added to the index after a merger with *H&R REIT* (Canada, constituent) - 5th January,
- *Alstria Office REIT AG* (Germany, constituent) was deleted from the index after a tender offer by Alexandrite Lake Lux Holdings (non-constituent, subsidiary of the Brookfield) -11th February,
- *Aventus Group* (Australia, constituent) was deleted from the index, following the stock acquisition of by *HomeCo Daily Needs REIT* (Australia, constituent) – 24th February,
- *Monmouth REIT Cl A* (USA, constituent) was deleted from the index after completion of the cash acquisition by Industrial Logistics Properties Trust – 28th February,
- *Cominar REIT* (Canada, constituent) was deleted after being acquired by Canderel Real Estate Property Inc and Blackstone (non-constituent)- 4th March,
- *CyrusOne* (USA, constituent) was deleted from the index following the completion of the cash acquisition by KKR and Global Infrastructure Partners – 30th March,
- *ARA LOGOS Logistics Trust* (Singapore, constituent) was deleted from the index, following the completion of the cash and stock acquisition by *ESR-REIT* (Singapore, constituent)– 20th April,
- *VICI Properties* (USA, constituent) remained in the index, following the completion of the merger with MGM Growth Properties LLC (USA, non-constituent) – 3rd May,
- *Workspace Group* (UK, constituent) remained in the index, following the completion of the cash and stock scheme of arrangement with McKay Securities (UK, non-constituent) – 6th May,
- *Hibernia REIT plc* (Ireland, constituent) was deleted from the index, following the cash offer arrangement with Benedict Real Estate Bidco (non-constituent) – 20th June.
- *Shimao (P Chip) (Hong Kong)* was deleted from the index – 8th June,
- *SPH REIT* (Singapore, constituent) remained in the index, following the company announcement of the cash tender offer by Cuscaden Peak Pte Ltd (Unlisted) – 6th July,
- *LXI REIT* (UK, REIT, Rental constituent) remained in the index after the completion of the cash and stock offer by Secure Income REIT (UK, non-constituent)– 11th July,
- *Irongate Group* (Australia, constituent) was deleted from the index, following the approval of the cash acquisition by Charter Hall PGGM Industrial Partnership No.2 (Unlisted) – 7th July,
- *PS Business Parks* (USA, constituent) was deleted from the index, subject to the completion of the acquisition by Blackstone Inc. (non-constituents) - 20th July,
- *Healthcare Realty Trust* (USA, constituent) was deleted from the index after a merger with *Healthcare Trust of America Inc* (USA, constituent) – 22nd July,
- *Deutsche EuroShop*, (Germany, constituent) remained in the index following a tender offer by Hercules Bidco (non-constituent) – 4th August
- *American Campus Communities* (USA, constituent) was deleted from the index, subject to the completion of the cash acquisition by Blackstone Funds. (non-constituents) – 10th August,
- *Duke Realty Corp* (USA, constituent) was deleted from the index after a merger with *Prologis* (USA, constituent) – 3rd October,

- *Befimmo* (Belgium, constituent) was deleted from the index, as a result of a tender offer by Alexandrite Monnet Belgian Bidco (non-constituent and controlled by one of Brookfield's real estate private funds) – 12th October,
- *Safehold Inc* (USA, constituent) remained in the index, after the completion of the unbundling of shares from iStar Inc (USA) – 8th December,
- *Neobo Fastigheter* (Sweden, non-constituents) was added to the index after demerging from *Samhallsbyggnadsbolaget i Norden AB* (Sweden, constituents), - 27th December

FTSE EPRA Nareit Developed Index – Top 10 Constituents*

Company	Sector	Country	Total Return
ProLogis USA	Industrial	USA	-31.2%
Equinix	Data Centers	USA	-21.1%
Public Storage, Inc.	Self-Storage	USA	-18.9%
Realty Income Corp.	Retail	USA	-7.3%
Simon Property Group, Inc.	Retail	USA	-22.2%
Vici Properties Inc	Specialty	USA	11.3%
Welltower	Healthcare	USA	-20.7%
Digital Realty Trust	Data Centers	USA	-40.6%
Alexandria Real Estate Equities, Inc.	Office	USA	-32.6%
AvalonBay Communities, Inc.	Residential	USA	-33.5%

FTSE EPRA Nareit Developed Index – Top 10 Performers*

Company	Sector	Country	Total Return
Deutsche EuroShop AG	Retail	GER	57.9%
Invincible Investment Corporation	Lod./Resorts	JA	42.6%
Japan Hotel REIT Investment	Lod./Resorts	JA	39.1%
Eurocommercial Properties NV	Retail	NETH	36.9%
Apartment Inv Management	Residential	USA	25.1%
Mercialys	Retail	FRA	24.7%
Vicinity Centres	Retail	AU	24.5%
City Developments	Diversified	SI	23.9%
Wharf Real Estate Investment	Diversified	HK	18.3%
Sun Hung Kai Properties Limited	Diversified	HK	18.1%

* Annual returns

Fig. 11. Global Weights (EUR)*

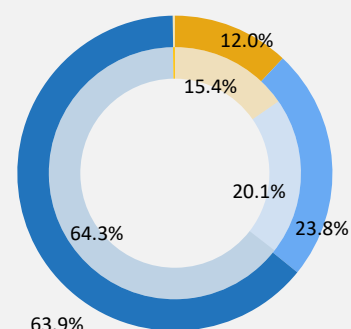


Fig. 12. REIT / Non-REITs

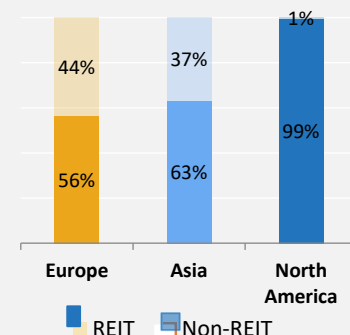


Fig. 13. Focus Split

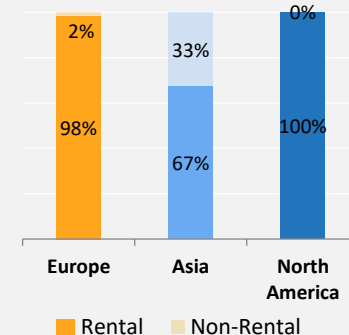


Fig. 14. Dividend Yields*

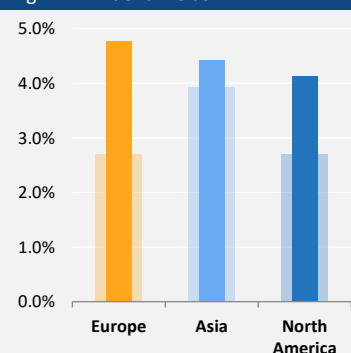


Fig. 15. Volatility (10 yr. & 3 yr.)**

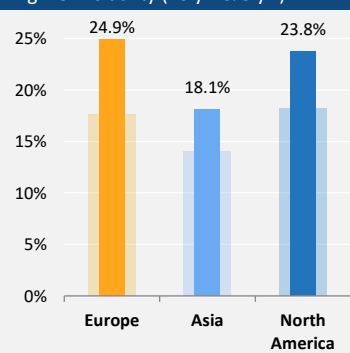


Fig. 16. Correlation (3 yr. rolling)



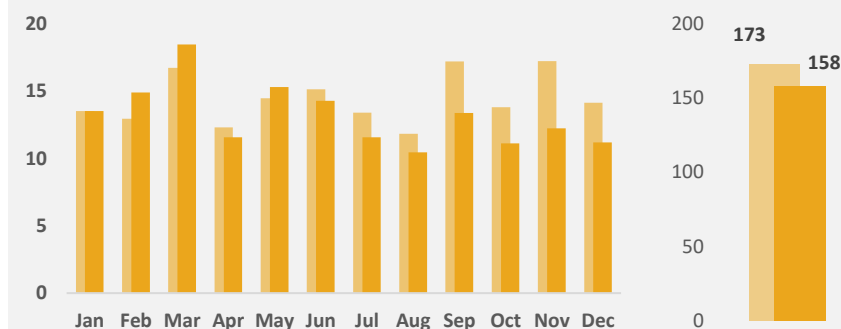
Table 1. Developed Europe Return by Sector (%)***

Dev. Europe: Monthly Total Return													Annual	Ukraine war	Covid-19
	Jan-22	Feb-22	Mar-22	Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Dec-22	23-Feb-22	19-Feb-20
Dev. Europe	-2.8%	-3.1%	0.9%	-5.6%	-4.0%	-15.8%	12.5%	-10.8%	-16.6%	3.7%	2.5%	-1.5%	-36.5%	-31.1%	-36.8%
Self-Storage	-10.9%	-2.1%	7.2%	-5.2%	-9.2%	-6.4%	12.5%	-7.2%	-21.2%	8.6%	-2.8%	2.2%	-33.1%	-20.9%	1.6%
Industrial	-8.0%	-2.5%	5.3%	-0.8%	-15.1%	-12.7%	13.8%	-13.9%	-21.1%	4.1%	-0.5%	-2.7%	-45.9%	-37.6%	-13.8%
Healthcare	-0.3%	-3.3%	10.0%	-0.9%	1.3%	-10.7%	10.0%	-7.7%	-17.2%	1.0%	-3.2%	-0.2%	-27.5%	-17.6%	-30.2%
Diversified	-2.5%	-5.8%	2.4%	-5.4%	-3.7%	-15.3%	11.8%	-13.7%	-14.8%	3.3%	4.2%	0.3%	-30.4%	-24.8%	-35.2%
Office	-1.7%	-4.7%	3.5%	-5.1%	0.5%	-15.9%	11.2%	-11.7%	-14.6%	8.7%	4.3%	-0.6%	-26.5%	-19.9%	-37.9%
Retail	8.7%	2.2%	-1.1%	-3.4%	0.8%	-17.8%	13.4%	-6.4%	-12.8%	7.9%	5.5%	-2.3%	-9.4%	-18.6%	-42.7%
Residential	-5.0%	-3.4%	-7.0%	-8.4%	-2.0%	-15.7%	9.4%	-8.9%	-17.4%	0.2%	1.2%	-4.1%	-48.5%	-45.0%	-45.9%
Lodging/Resorts	-9.4%	1.9%	4.7%	-2.6%	-4.3%	-16.3%	33.3%	-13.5%	-11.8%	13.7%	-4.0%	-11.9%	-26.2%	-21.0%	-49.4%

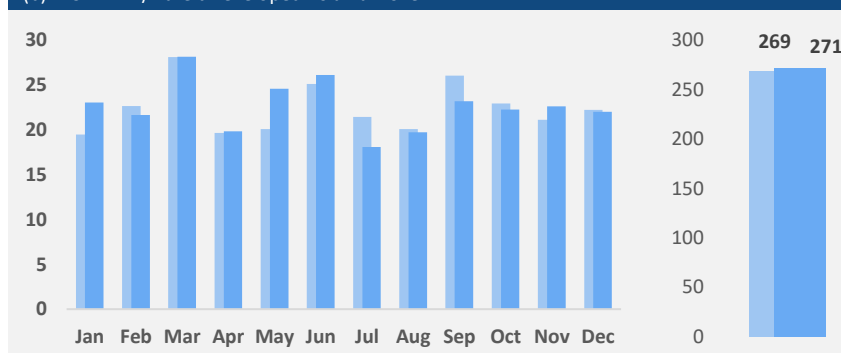
(*) Shaded bars are last year's (**) Shaded bars are 10 yr.

(***) Data is compiled from the FEN Index series (as of 30 December 2022).

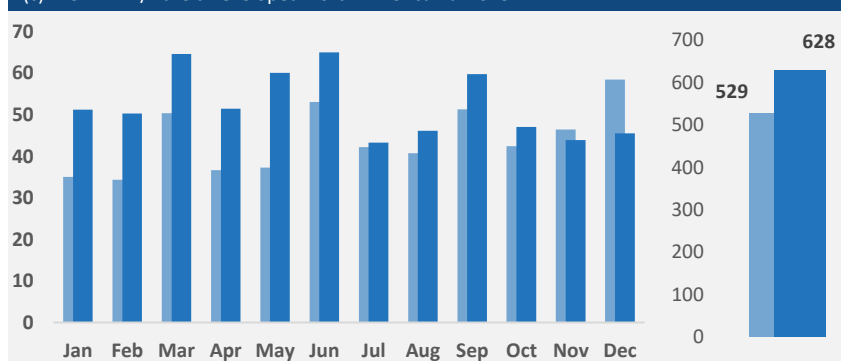
Fig. 17 (a) TSE EPRA/Nareit Developed Europe Turnover*



(b) FTSE EPRA/Nareit Developed Asia Turnover



(c) FTSE EPRA/Nareit Developed North America Turnover



(*) All in EUR billion (Shaded bars 2021).

FTSE EPRA Nareit Developed Europe Index

During December 2022, the FEN Developed Europe Index lost 1.5%, and also Europe equities and bonds posted monthly returns of -2.5% and -7.9%, respectively. Over a one-year period, Europe real estate index lost 36.5% compared to a loss of 10.1% from European equities and 14.2% from European bonds.

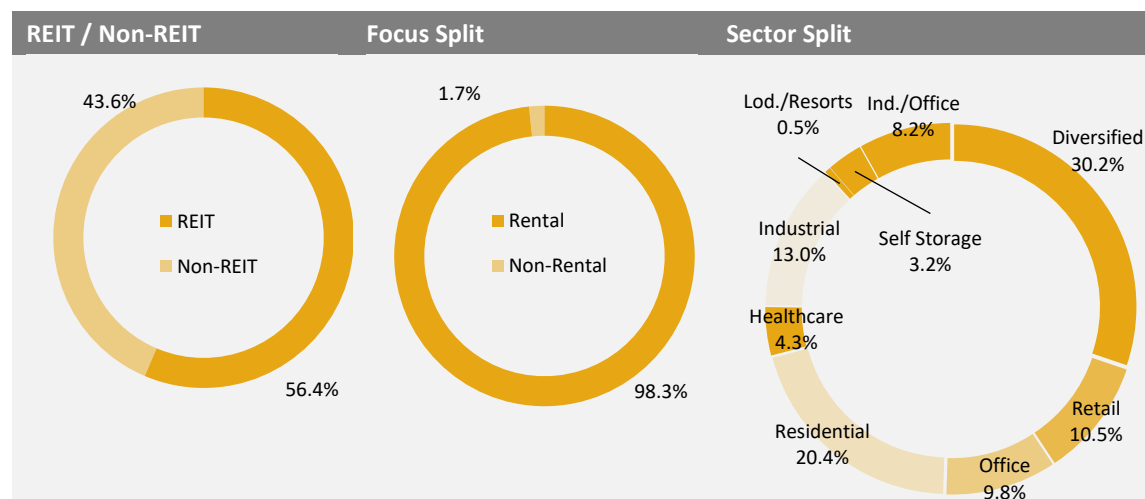
Based on cumulative returns (since 19/02/2020), the FEN Developed Europe index is still performing well below its pre-Covid19 level with -36.8% cumulative return.

Focusing on country performances in 2022, all countries returned negative: Ireland (-5.2%) and Austria (-5.9%) were top performers with relatively lower negative annual returns. On the other hand, Norway (-46.8%), Sweden (-48.8%) and Germany (-52.3%) were the bottom performers with the highest negative annual returns in Developed Europe region.

Annual performance of sectors All sectors posted negative annual returns which retail (-9.4%) was the top performer with still negative but relatively lower annual return. Meanwhile, residential (-48.5%), industrial (-45.9%) and industrial/office (-45.0%) were bottom performers posting the highest negative annual returns, followed by self-storage (-33.1%), diversified (-30.4%), healthcare (-27.6%), lodging/resorts (-26.2%) and office (-26.5%).

2022-Q4 Index Review : There were no additions or deletions in Europe index.

Developed Europe representing a free float MCap of around **EUR 173 billion** with **111** constituents, as of 30/12/2022.



FTSE EPRA Nareit Developed Europe - Country Indices

% Total Returns	Dec-22	1 yr	3 yrs*	5 yrs*	10 yrs*
Europe (EUR)	-1.5	-36.5	-12.2	-4.2	3.8
Europe ex UK (EUR)	-0.8	-36.9	-12.8	-4.5	4.1
UK (GBP)	-0.4	-31.9	-9.6	-3.5	3.8
France (EUR)	0.5	-11.2	-11.5	-5.1	2.4
Netherlands (EUR)	-3.4	-14.3	-23.0	-18.8	-6.6
Germany (EUR)	-4.4	-52.3	-19.4	-9.1	4.0

(*) Annualised.

FTSE EPRA Nareit Developed Europe – Top 5 Performers*

Company	Sector	Country	Total Return
Deutsche EuroShop AG	Retail	GER	57.9%
Eurocommercial Properties NV	Retail	NETH	36.9%
Mercialys	Retail	FRA	24.7%
Hufvudstaden AB	Diversified	SWED	11.6%
Klepierre SA	Retail	FRA	11.4%

FTSE EPRA Nareit Developed Europe – Bottom 5 Performers*

Company	Sector	Country	Total Return
Adler Group SA	Residential	GER	-87.7%
Peach Property Group AG	Residential	SWIT	-73.6%
Corem Property Group (B)	Ind./Office	SWED	-73.4%
TAG Immobilien-AG	Residential	GER	-68.8%
VGP NV	Industrial	BELG	-66.9%

* Annual returns

FTSE EPRA Nareit Developed Asia Index

The FEN Developed Asia Index lost 1.8%, compared to a loss of 5.9% and 4.9% from equities and bonds, during December. Asia real estate index posted an annual return of -5.1%, while Asia equities and bonds lost 3.5% and 49 bps, respectively, during the same period.

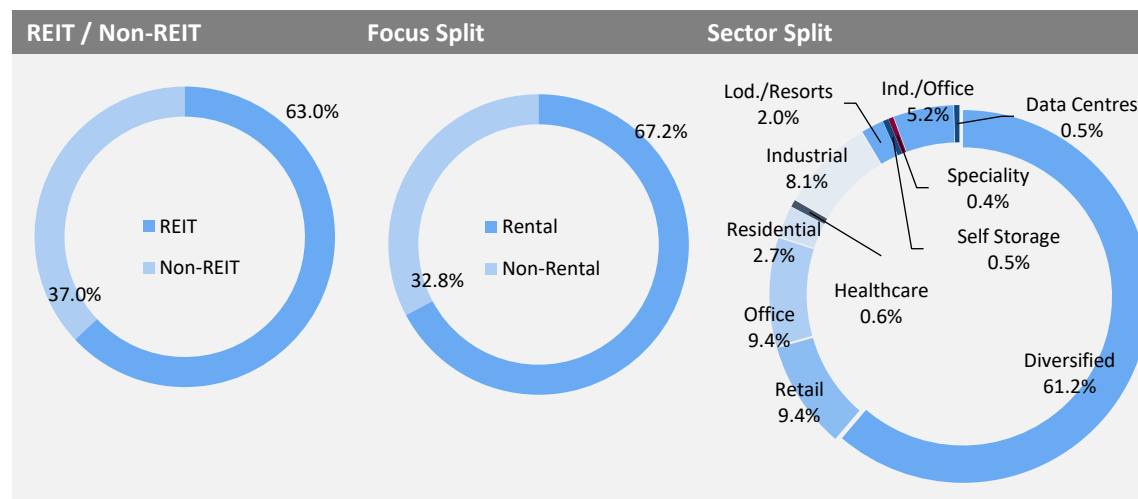
Based on cumulative returns (since 19/02/2020), the FEN Developed Asia index is still performing below its pre-Covid19 level with -15.1% cumulative return.

Focusing on country performance, Hong Kong (82 bps) outperformed with positive but lower annual return and the remaining countries posted negative annual returns that Australia (-11.4%) and Singapore (-6.3%) were bottom performers – *in local currencies*.

Annual performance of sectors: Lodging/resort (22.6%) was outperformer as the only sector returned positive. Industrial (-23.6%), residential (-13.4%) and office (-13.3%) were bottom performers in Asia region.

2022-Q4 Index Review : *SK REIT* (South Korea, REIT, Diversified) was added in, while *Home Consortium* (Australia) was deleted from Asia index during the index review. In addition, there were two sector reclassifications in Asia index: *Charter Hall Long Vale REIT* (Australia) from 'Industrial/Office' to 'Diversified' and *HomeCo Daily Needs REIT* from 'Diversified' to 'Retail.'

Developed Asia representing a free float MCap of over **EUR 343billion** with **136** constituents, as of 30/12/2022.



FTSE EPRA Nareit Asia - Country Indices

% Total Returns	Dec-22	1 yr	3 yrs*	5 yrs*	10 yrs*
Asia (EUR)	-1.8	-5.1	-3.9	1.9	3.7
Hong Kong (HKD)	12.0	0.8	-3.0	-2.2	1.7
Japan (JPY)	-6.9	-2.0	-1.3	3.9	5.5
Australia (AUD)	-1.6	-11.4	-4.5	1.8	7.3
Singapore (SGD)	-0.7	-6.3	-1.1	2.4	4.1
South Korea	-16.4	na			

(*) Annualised.

FTSE EPRA Nareit Developed Asia – Top 5 Performers*

Company	Sector	Country	Total Return
Invincible Investment Corp.	Lod./Resorts	JA	42.6%
Japan Hotel REIT Investment	Lod./Resorts	JA	39.1%
Vicinity Centres	Retail	AU	24.5%
City Developments	Diversified	SI	23.9%
Wharf Real Estate Investment	Diversified	HK	18.3%

FTSE EPRA Nareit Developed Asia – Bottom 5 Performers*

Company	Sector	Country	Total Return
Kenedix Office Investment Corp.	Office	JA	-52.0%
MANULIFE US REIT	Office	SI	-50.9%
Prime US REIT	Office	SI	-43.3%
Keppel Pacific Oak US REIT	Office	SI	-35.6%
Cromwell European REIT	Ind./Office	SI	-33.9%

* Annual returns

FTSE EPRA Nareit North America Index

The FEN North America Index returned -8.4%, compared to a loss of 9.3% and 4.4% from equities and bonds in December. North America real estate index posted 19.9% on annual basis, while North America equities and bonds posted -13.6% and -6.5% annual returns, respectively.

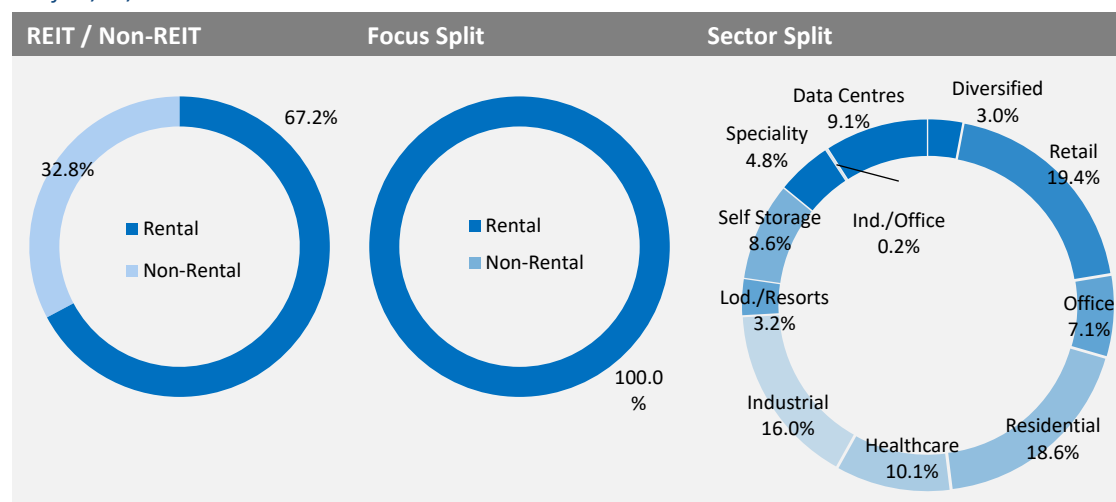
Based on cumulative returns (since 19/02/2020), the FEN Developed North America index is also performing below its pre-Covid19 level with -6.3% cumulative return, which is relatively limited compared to other regions.

Over a one-year period, the U.S. Index and the Canada Index posted annual returns of -24.8% and 19.3%, respectively - in local currencies.

Annual performance of sectors: Specialty (14.5%) was outperformer and the remaining sectors posted negative annual returns, that office (-32.6%), residential (-27.3%), industrial (-24.5%) and data centres (-23.3%) were bottom performers in North America region. Similar to the other regions, retail (-7.8%) and lodging/resorts (-9.7%) gained some momentum during 2022 posting relatively lower but still negative annual returns.

2022-Q4 Index Review There were no additions or deletions in North America index.

Developed North America representing a free float MCap of around **EUR 920 billion** with **132 constituents** as of 30/12/2022.



FTSE EPRA Nareit Developed North America - Country Indices

% Total Return	Dec-22	1 yr	3 yrs*	5 yrs*	10 yrs*
North America (USD)	-5.0	-24.8	-1.1	3.0	5.6
United States (USD)	-5.1	-24.8	-1.0	3.0	6.0
Canada (CAD)	-2.7	-19.3	-1.9	3.5	4.8

(*) Annualised.

FTSE EPRA Nareit Developed North America – Top 5 Performers*

Company	Sector	Country	Total Return
Apartment Inv Management	Residential	USA	25.1%
Gaming & Leisure Properties	Specialty	USA	12.8%
Vici Properties Inc	Specialty	USA	11.3%
LTC Properties Inc	Healthcare	USA	10.2%
Getty Realty Corp.	Retail	USA	9.4%

FTSE EPRA Nareit Developed North America – Bottom 5 Performers*

Company	Sector	Country	Total Return
Safeshold Inc.	Specialty	USA	-63.1%
Innovative Industrial Properties, Inc.	Industrial	USA	-58.8%
Hudson Pacific Properties	Office	USA	-56.6%
Orion Office REIT	Office	USA	-52.1%
Douglas Emmett Inc.	Office	USA	-50.1%

* Annual returns

FTSE EPRA Nareit Emerging Index

During December 2022, the FEN Emerging Index lost 4.1%, resulting in a negative 6.7% annual return. Meanwhile, emerging equities and bonds lost 4.5% and 3.3% for the month, respectively. As a result, annual return stands at -11.7% for equities and -11.2% for bonds.

Based on cumulative returns (since 19/02/2020), the FEN Emerging index is still performing quite below its pre-Covid19 level with -33.0% cumulative return. Emerging markets have been fragile since the beginning of the pandemic, and inflation and volatility in exchange rates put additional pressure. Moreover, China's zero Covid policy had an impact not only nationwide but also on global economy. At the end of the year, easing restrictions has created optimism in the markets.

(to read EPRA's special report: [Emerging Markets Reports – Special Edition](#)).

Annual performance of top/bottom countries: Turkey (207.6%) was outperformer followed by Chile (35.4%), Thailand (28.2%), Mexico (26.1%), Kuwait (21.1%) and UAE (19.1%). Meanwhile, Czechia (-32.6%), China (-17.5%), Indonesia (-12.8%) and Philippines (-11.5%) were bottom performers with the highest negative annual returns in the emerging index.

Annual performance of sectors: Retail (14.0%) was outperformer followed by healthcare (27 bps) and the remaining sectors returned negative of which diversified (-11.1%), office (-5.0%) residential (-4.2%) and industrial (-2.5%) were bottom performers in the emerging index.

2022-Q4 Index Review: There were seven additions and two deletions in the emerging index. *GDS Holdings* (China, Data centres), *Iguatemi SA* (Brazil, Retail), *Mefic REIT Units* (Saudi Arabia, Diversified), *Mulkia Gulf Real Estate REIT* (Saudi Arabia, Diversified), *MAS* (South Africa, Retail), *Akis GYO* (Turkey, Retail) and *Alarko GYO* (Turkey, Diversified) were added to index, while two Chinese companies namely *Road Kong Infrastructure* and *Dexin China Holdings (P Chip)* were deleted from the emerging index.

At the end of December 2022, the **FEN Emerging Index** counted a total of **131** constituents, representing a free float market capitalisation of around **EUR 127 billion**.

FTSE EPRA Nareit Emerging - Country Indices

% Total Returns	Dec-22	1 yr	3 yrs*	5 yrs*	10 yrs*
Emerging (EUR)	-4.1	-6.7	-12.8	-4.3	1.6
Emerging EMEA (EUR)	-3.7	3.8	-4.7	-6.7	0.3
Emerging Europe (EUR)	10.9	-2.4	16.2	5.0	-0.7
Emerging MEA (EUR)	-5.2	6.9	-6.6	-7.6	1.4
Emerging APAC (EUR)	-4.1	-12.4	-15.2	-5.4	3.2
Emerging Americas (EUR)	-4.4	17.6	-11.5	-0.7	-7.4

(*) Annualised.

FTSE EPRA Nareit Emerging – Top 10 Constituents

Company	Sector	Country	Total Return
China Resources Land Ltd	Diversified	CHN	14.2%
China Overseas Land & Investment Ltd.	Diversified	CHN	17.9%
SM Prime Holdings	Diversified	PHIL	5.0%
Longfor Group Holdings (P Chip)	Diversified	CHN	-29.0%
Central Pattana Public Company Limited	Diversified	THAI	26.7%
ALDAR PROPERTIES PJSC	Diversified	UAE	14.8%
Ayala Land	Diversified	PHIL	-15.3%
China Vanke Co., Ltd (H)	Residential	CHN	-6.6%
Hang Lung Properties Ltd.	Diversified	CHN	0.0%
Fibra Uno Administracion S.A. de C.V.	Diversified	MEX	16.6%

FTSE EPRA Nareit Emerging – Top 10 Performers

Company	Sector	Country	Total Return
Emlak Konut GYO	Residential	TUR	312.7%
Is GYO	Diversified	TUR	251.2%
Ozak GYO	Diversified	TUR	216.9%
Sansiri	Residential	THAI	51.2%
Yuexiu Property (Red Chip)	Residential	CHN	47.0%
C&D International Investment Group	Diversified	CHN	45.7%
Cencosud Shopping SA	Retail	CHL	41.3%
Direcional Engenharia	Residential	BRAZ	32.3%
Central Pattana Public Company Ltd.	Diversified	THAI	26.7%
AP Thailand	Residential	THAI	26.7%

FTSE EPRA Nareit Emerging – Bottom 10 Performers

Company	Sector	Country	Total Return
Construtora Tenda SA	Residential	BRAZ	-74.8%
CIFI Holdings (Group) (P Chip)	Residential	CHN	-73.6%
KWG Group Holding	Diversified	HK	-63.5%
Country Garden Holdings	Residential	CHN	-60.0%
Powerlong Real Estate Holdings	Diversified	CHN	-59.1%
Mitre Realty Empreendimentos e Participacoes SA	Residential	BRAZ	-52.7%
Helbor Empreendimentos S.A.	Diversified	BRAZ	-52.6%
HBR Realty Empreendimentos Imob. SA	Diversified	BRAZ	-48.8%
Agile Property Holdings	Diversified	CHN	-45.4%
China SCE Group Holdings (P Chip)	Diversified	CHN	-45.0%

EPRA Developers Research Benchmark

Friday, 30 December 2022



Historical Performance	Last Month	1 Year	3 Years	5 Years
Total Return	-3.1%	-41.9%	-38.8%	-25.7%
Total Return (Annualized)		-41.9%	-12.9%	-5.2%

Return	3 Months	6 Months	Year to Date	5 Years
Total Return	9.8%	-15.0%	-41.9%	-25.7%
Maximum Return	6.3%	6.3%	6.3%	11.6%
Minimum Return	-4.0%	-5.6%	-6.1%	-13.2%
Mean Return (Annualized)	81.3%	-31.2%	-50.1%	-1.5%
Maximum Drawdown	-10.5%	-34.4%	-51.1%	-55.3%
Maximum Drawdown Length	6	52	201	690

Risk	3 Months	6 Months	Year to Date	5 Years
Standard Deviation (Annualized)	31.6%	33.6%	31.0%	31.2%
Downside Risk (Annualized)	19.9%	23.3%	22.1%	22.1%
Kurtosis	0.80	0.48	0.67	6.86
Skewness	0.70	0.17	-0.02	0.09
Semivariance (Annualized)	25.9%	32.9%	31.4%	31.3%
VaR (ex-post)	-2.67	-3.71	-3.52	-2.96

Risk-Adjusted Performance	3 Months	6 Months	Year to Date	5 Years
Sharpe Ratio	1.63	-0.72	-1.27	-0.02

The **EPRA Developers Research Benchmark** is an equity index aiming to represent the aggregated performance of the most significant and liquid real estate developers in Europe, including both residential and commercial developers.

This is a benchmark developed for research purposes only, using free float market cap as the main input for computing index weights. The final list of constituents has been filtered applying a comprehensive methodology that combines both market and real estate criteria to determine the best companies to represent the sector. **Two sub-indexes are also computed:** 1) Liquid Developers (FFMC > EUR 500M) and 2) Residential Developers

Key Features

Benchmark Type: Equity Index

Industry: Real Estate Developers

Launch Date: 31/Dec/2021

Geography: Developed Europe

Weights Input: FF Market cap

Base Currency: EUR

Base Date: 30/Sep/2016

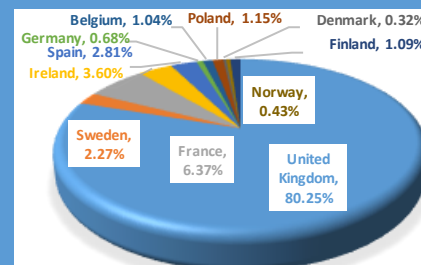
Base Value: 1,000

Review Dates: April, October

EPRA Developers Research Benchmark

Friday, 30 December 2022

Constituent	ISIN	Weight	Country	Currency
PERSIMMON	GB0006825383	14.68%	UK	GBp
BARRATT DEV	GB0000811801	14.00%	UK	GBp
BERKELEY GROUP	GB00BLJNL82	13.60%	UK	GBp
TAYLOR WIMPEY PL	GB0008782301	11.81%	UK	GBp
VISTRY GROUP PLC	GB0001859296	8.65%	UK	GBp
BELLWAY PLC	GB0000904986	8.48%	UK	GBp
REDROW PLC	GB00BG11K365	4.86%	UK	GBp
CREST NICHOLS	GB00B8VZXT93	1.91%	UK	GBp
WATKIN JONES PLC	GB00BD6RF223	0.84%	UK	GBp
HARWORTH GROUP P	GB00BYZJ7G42	0.75%	UK	GBp
MJ GLEESON PLC	GB00BRKD9Z53	0.65%	UK	GBp
YIT OYJ	FI0009800643	1.09%	Finland	EUR
GLENVEAGH PROPER	IE00BD6JX574	1.77%	Ireland	EUR
CAIRN HOMES	IE00BWY4ZF18	1.83%	Ireland	GBp
NEXITY	FR0010112524	3.26%	France	EUR
KAUFMAN & BROAD	FR0004007813	1.34%	France	EUR
ALTAREA	FR0000033219	1.77%	France	EUR
NEINOR HOMES SA	ES0105251005	0.84%	Spain	EUR
AEDAS HOMES SA	ES0105287009	0.43%	Spain	EUR
METROVACESA SA	ES0105122024	1.53%	Spain	EUR
JM AB	SE0000806994	2.27%	Sweden	SEK
DEVELIA SA	PLCCRP00017	0.67%	Poland	PLN
DOMDEV	PLDMDVL00012	0.47%	Poland	PLN
ATENOR	BE0003837540	0.53%	Belgium	EUR
IMMOBEL	BE0003599108	0.51%	Belgium	EUR
INSTONE REAL EST	DE000A2NBX80	0.68%	Germany	EUR
SELVAAG BOLIG AS	NO0010612450	0.43%	Norway	NOK
HUSCIET A/S	DK0061412855	0.32%	Denmark	DKK



Eligibility Criteria

EBITDA: ≥ 50% from Property Development
EBITDA: ≥ 75% from Real Estate Activities

Size: > 0.30% of the Benchmark size and
 Minimum of EUR 150 Million in FFM

Liquidity: ≥ 0.05% of their (FF) shares in
 issue based on their median daily trading
 volume per month

Reporting: public AR in English (Full set of
 audited FS, notes and Mgt Report)

Geography: ≥ 75% EBITDA from Developed
 countries

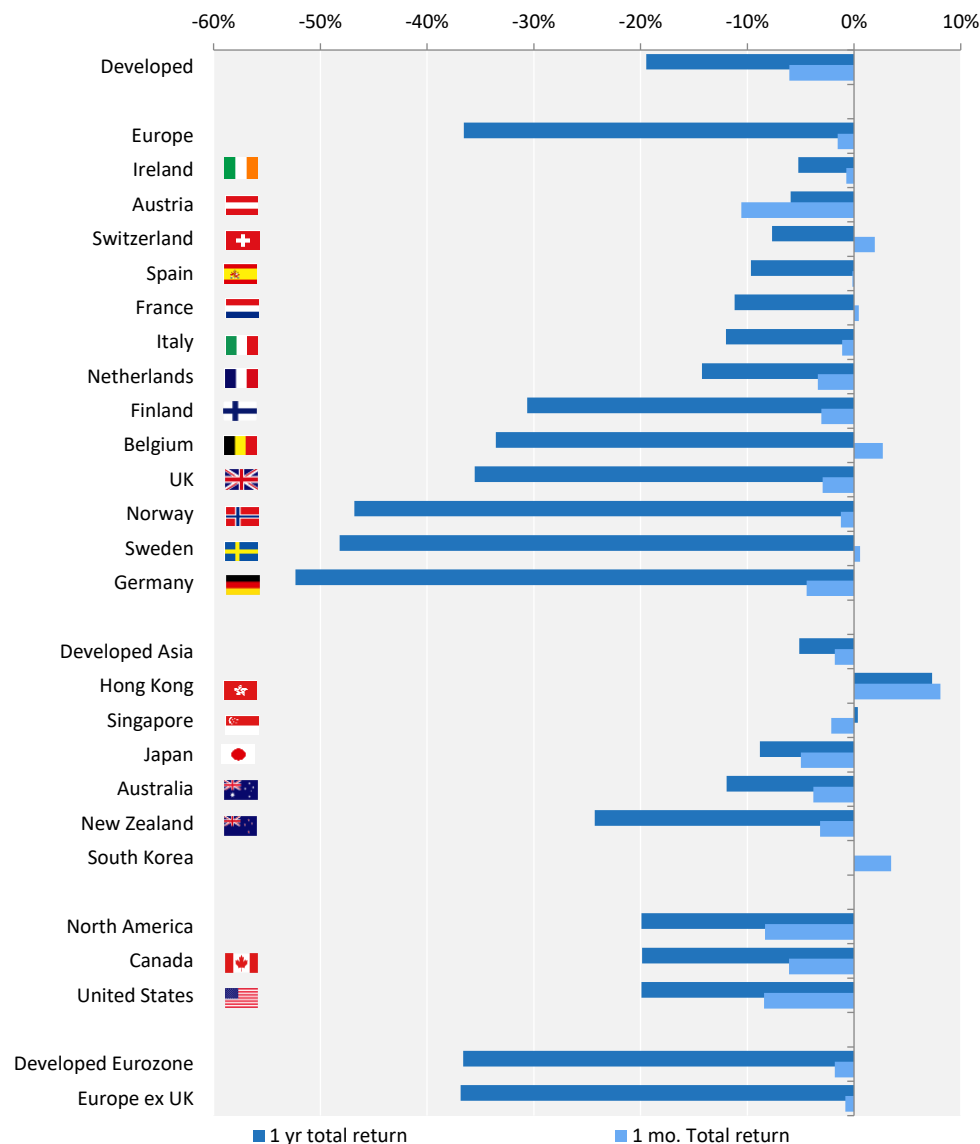
Assets: ≥ 50% of Total Tangible Assets
 invested in RE. No Holding structures.

Eligible Markets: Premium and main trading
 segments of official stock exchanges.

Data Availability: Monthly computations.
 Performance figures available on this report.
 Raw data accessible on demand at
research@epra.com

Developers Sub-Indexes: Risk and Return	3 Months	6 Months	Year to Date	5 Years
Residential Developers: Total Return	8.81%	-16.01%	-43.29%	-27.42%
Residential Developers: Standard Deviation (Annualized)	32.38%	34.97%	32.24%	32.24%
Liquid Developers: Total Return	7.96%	-16.83%	-43.57%	-26.82%
Liquid Developers: Standard Deviation (Annualized)	31.56%	34.10%	31.46%	31.79%

FTSE EPRA Nareit Monthly Index Performances (EUR)



Source : FTSE EPRA Nareit as of December 30, 2022

Link to Reports & Contacts

Monthly Statistical Bulletin

Monthly Published NAV Bulletin

Monthly LTV Report

Visit our website to read our reports: [Monthly Reports](#)

[Index Ground Rules Version 11.3](#)

[Property Portfolio Analysis \(end of 2021\)](#)

[Emerging Markets 2022](#)

[Sector Analysis: Residential](#)

[Sector Analysis: Office \(Aug-21\)](#)

[Inflation and short-term impact on listed property companies](#) (Feb-22)

[Interest rates and inflation : What are the challenges for listed real estate?](#) (June-22)

[Total Markets Table 2022-Q3](#) (quarterly)



EPRA CONTACTS:

Dilek Pekdemir, PhD.

Research Manager

d.pekdemir@epra.com

David Moreno, CFA

Indexes Manager, Indices & Research

d.moreno@epra.com

Lourdes Calderon Ruiz

Senior Analyst Indices & Research

l.calderonruiz@epra.com

Iskren Marinov

Analyst Indices & Research

i.marinov@epra.com

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EPRA Bayes Business School Online Programme, 2023 Edition: Understanding the REIT price

An online programme dedicated to understanding the listed real estate market, the third edition will be in Autumn 2023.

For more information about the Education programmes, contact: education@epra.com.

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