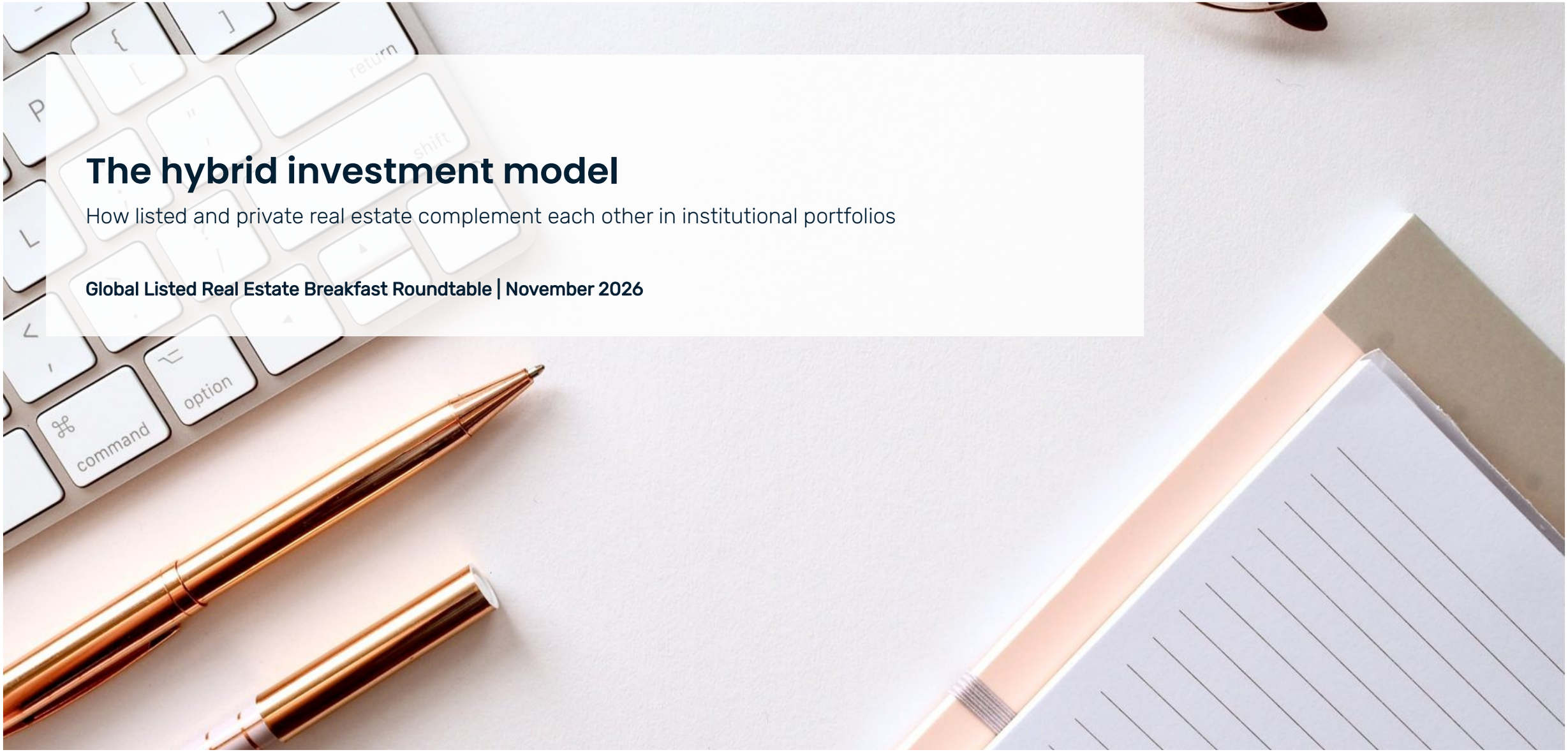
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The hybrid investment model

How listed and private real estate complement each other in institutional portfolios

Global Listed Real Estate Breakfast Roundtable | November 2026

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Same buildings, two prices

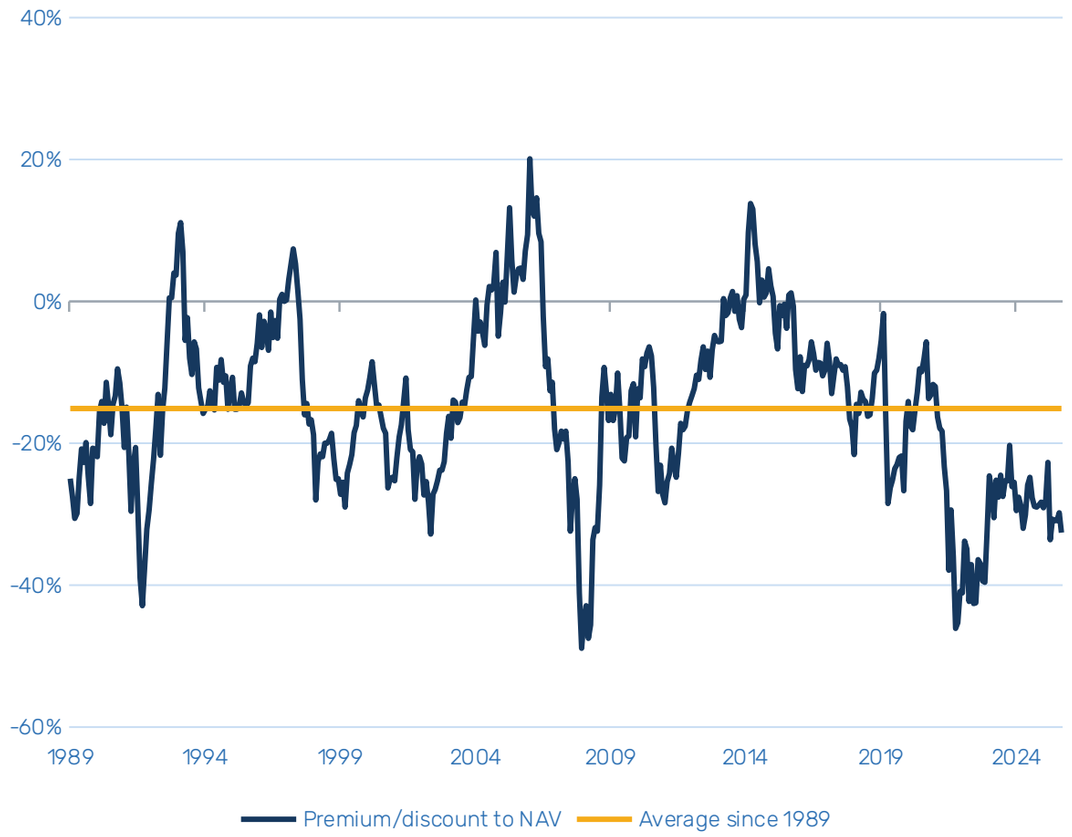
The argument in brief

- Listed and non-listed real estate own the same kind of buildings. The stock market prices them every day, appraisers once a quarter or once a year.
- Over five years or more the two routes move largely together. Over one to three years they can be far apart.
- That gap is what a hybrid portfolio uses: a quick and liquid way into sectors the fund portfolio does not yet hold, and a second price to buy or sell against.
- The cost is volatility and, in the short term, a high correlation with equities.
- The mix does not have to be fixed: more listed when the discount to NAV is very wide, more non-listed when shares trade at a premium.

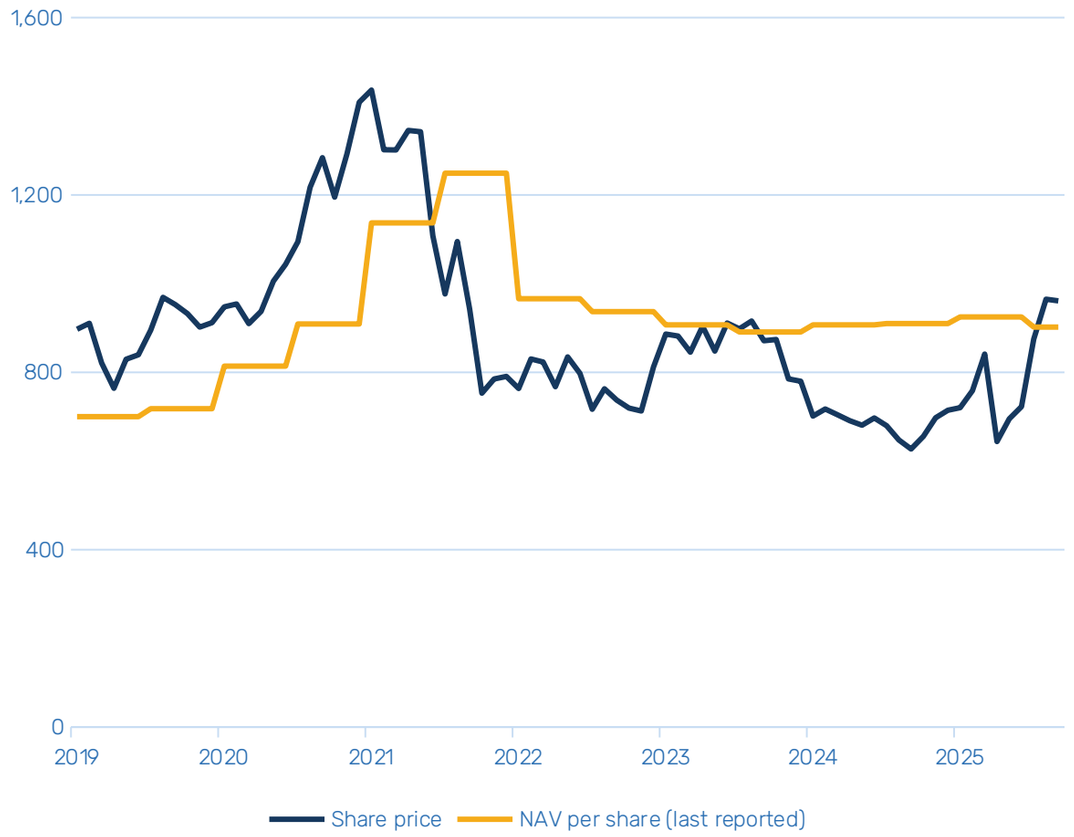
Share prices move first, valuations follow

SEGRO's shares fell 32.0% in the first half of 2022 while its reported NAV rose 9.8%; the NAV fell 22.7% in the second half

FTSE EPRA Nareit Developed Europe, premium or discount to NAV, %



SEGRO: share price and reported NAV per share (EPRA NTA), pence



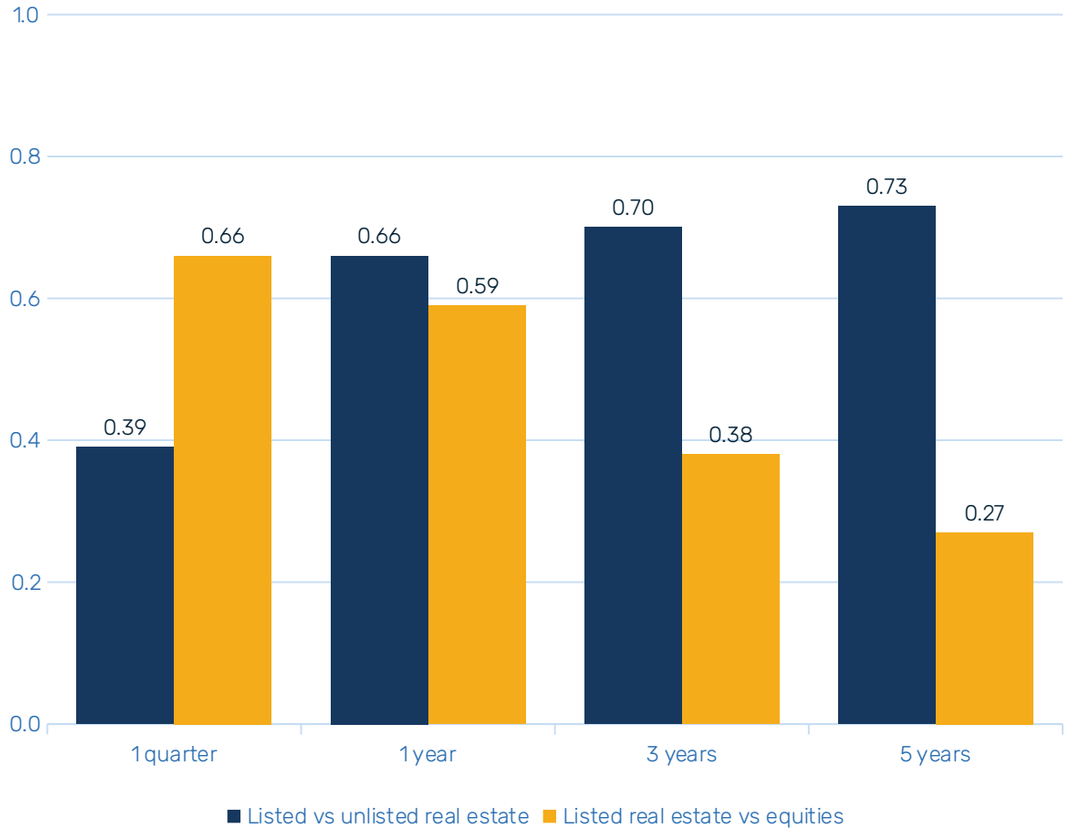
Source: EPRA, FMP, SEGRO, Macro Real Estate

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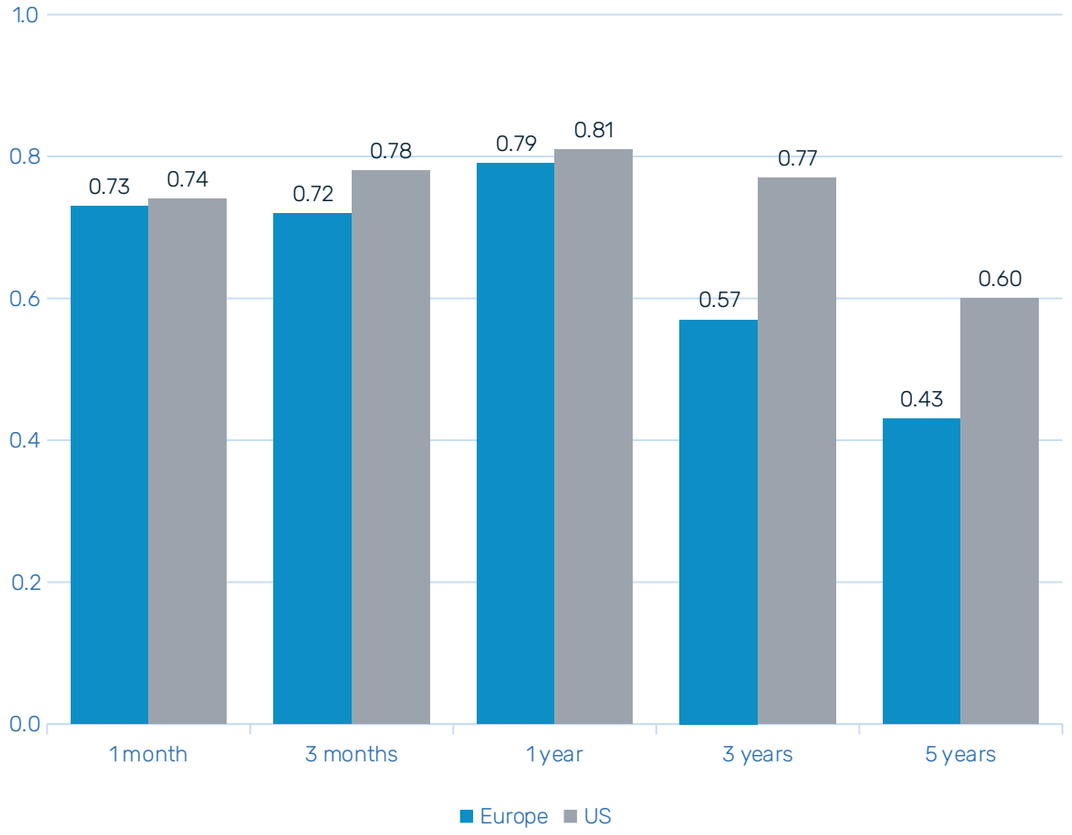
With time, listed real estate behaves more like real estate

Over longer holding periods the correlation with unlisted real estate rises and the correlation with equities falls

US, correlation by holding period, 1984–2023 (unlisted: NCREIF, de-smoothed)



Listed real estate vs equities, 2006–2026



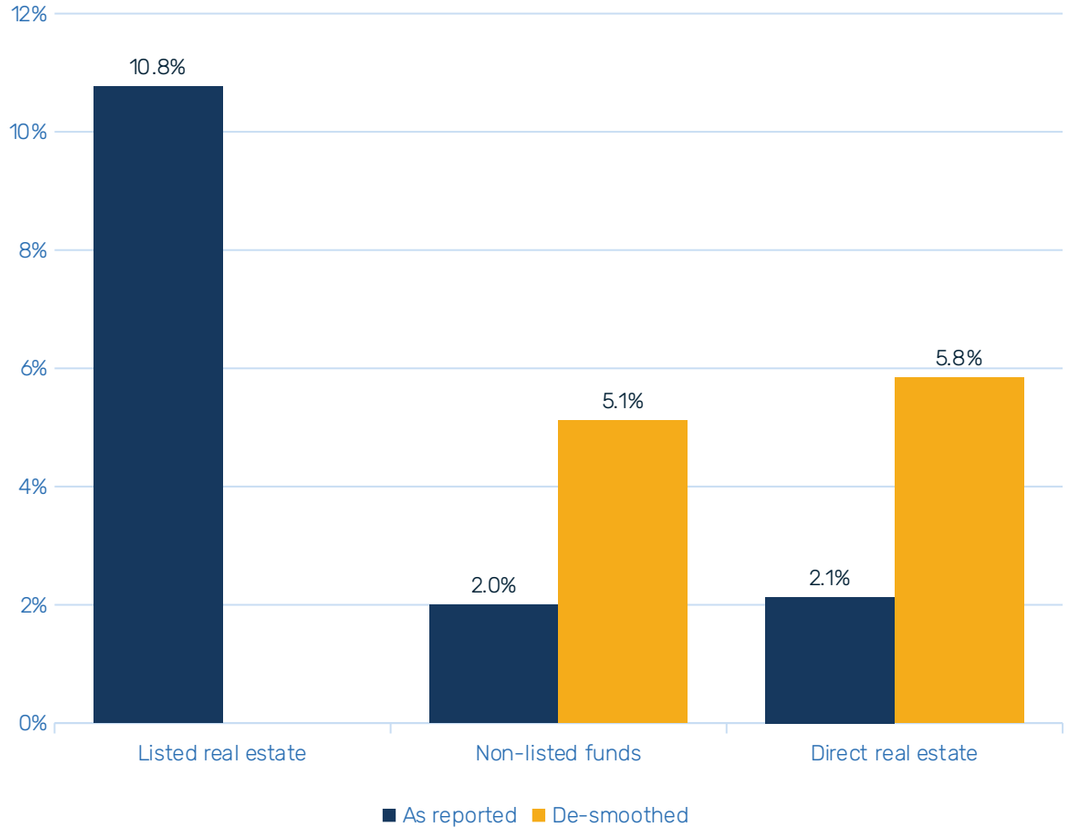
Source: NBIM, FMP, Macro Real Estate

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The price of liquidity is volatility

Listed real estate is about five times as volatile as non-listed funds report, and about twice as volatile once their returns are de-smoothed

Europe: standard deviation of quarterly total returns, Q1 2008 to Q4 2024, %



From liquid and volatile to stable and illiquid



- Traded every day on the stock exchange
- Priced by the market every day
- Quarterly volatility 10.8%

- Redeemed in periodic windows, or held to the end of the fund
- Appraised, typically every quarter
- Quarterly volatility 2.0% as reported, 5.1% de-smoothed

- A sale takes months
- Appraised, typically once or twice a year
- Quarterly volatility 2.1% as reported, 5.8% de-smoothed

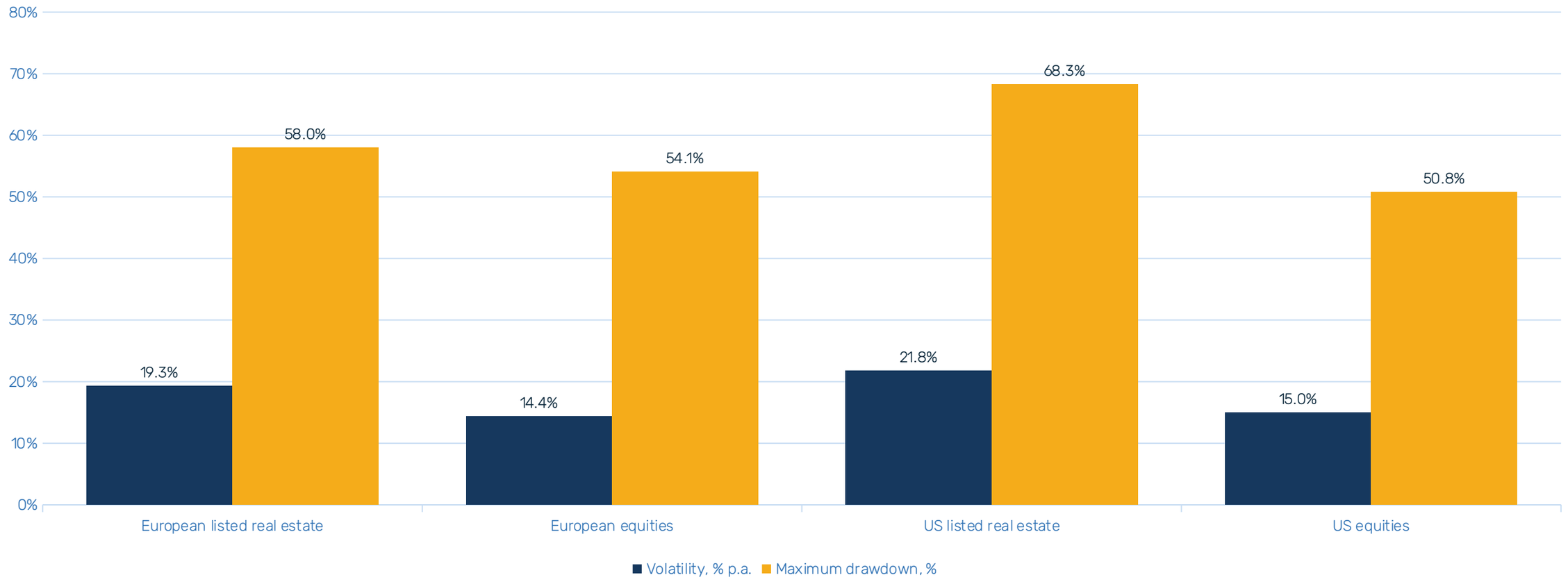
Source: Lin and Zhao, EPRA, Macro Real Estate

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Listed real estate has also been more volatile than equities

European listed real estate returned 2.8% a year since February 2006, European equities 6.6%

Annualised volatility and maximum drawdown of total returns, February 2006 to November 2026, %



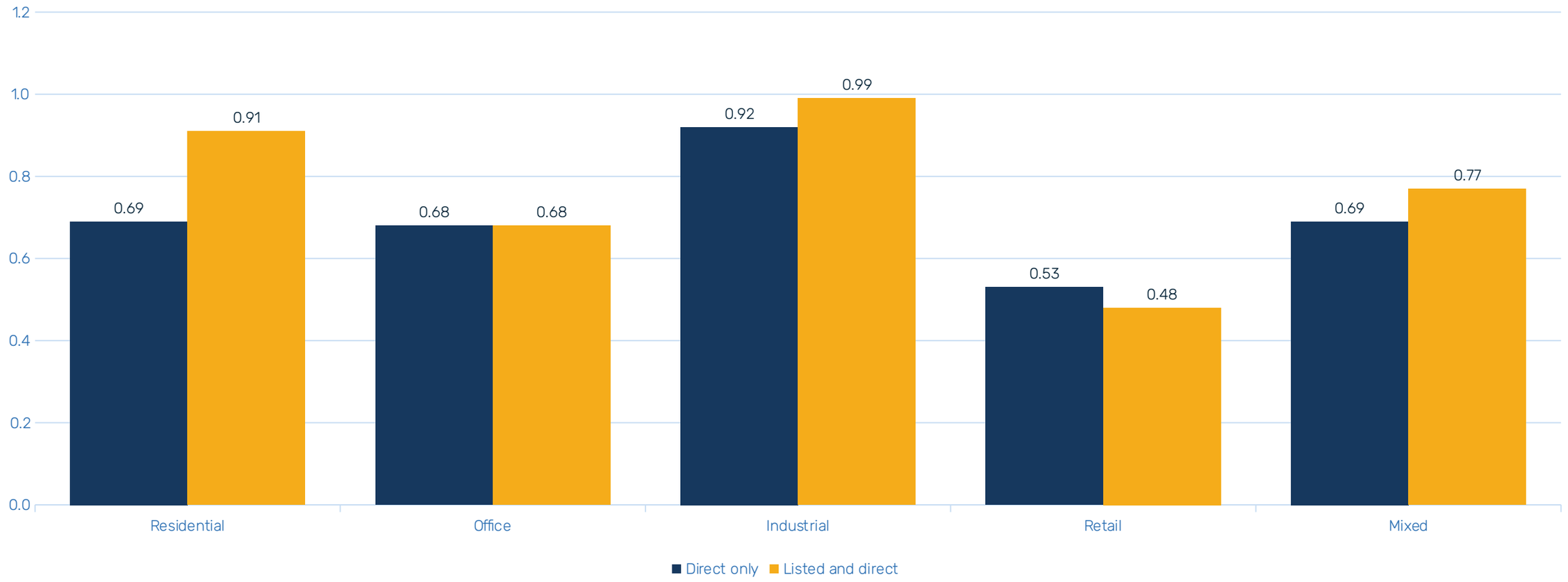
Source: FMP, Macro Real Estate

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Combining the two raised Sharpe ratios in three of five sectors

Europe: office was unchanged and retail fell

Sharpe ratio by sector portfolio, March 2010 to December 2023, five-year holding period



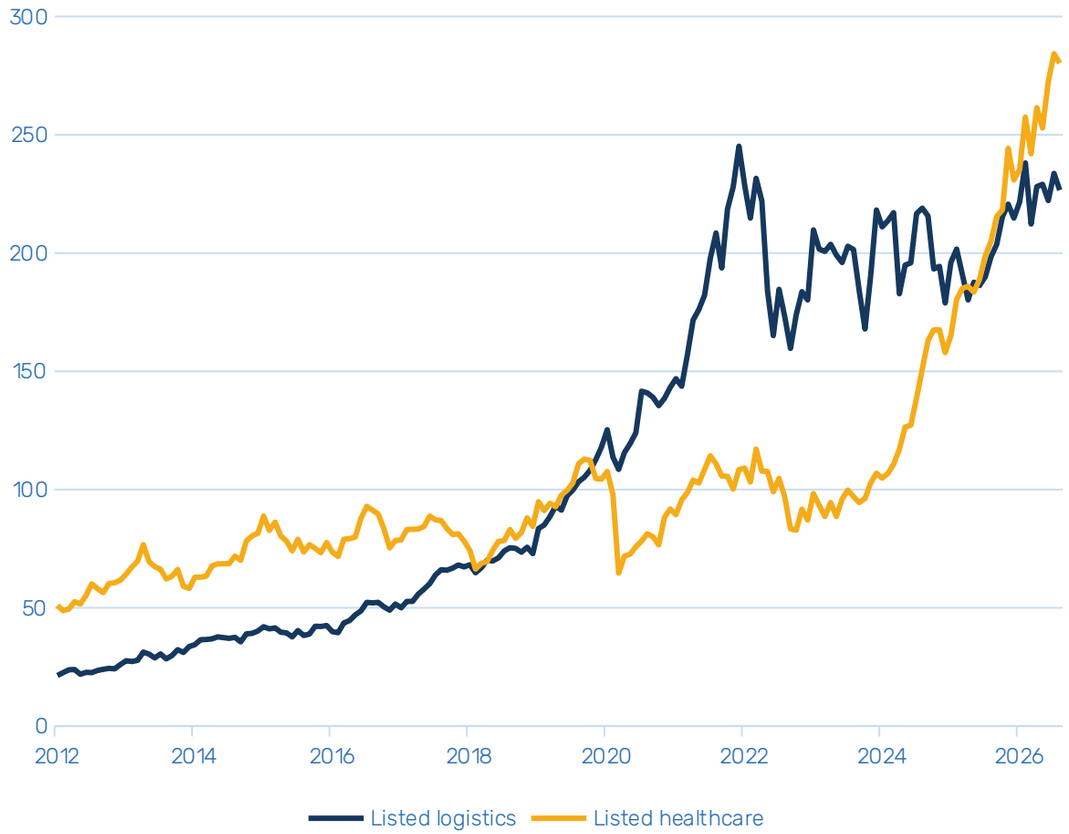
Source: Oxford Economics, EPRA, Macro Real Estate

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The listed route is the quick way into a new sector

Listed healthcare landlords: USD 105 billion in January 2024, USD 280 billion in August 2026, including share issuance and acquisitions

Market capitalisation of listed companies, US and Europe, USD bn



Source: FMP, ECB, Macro Real Estate

From listed to non-listed in four steps

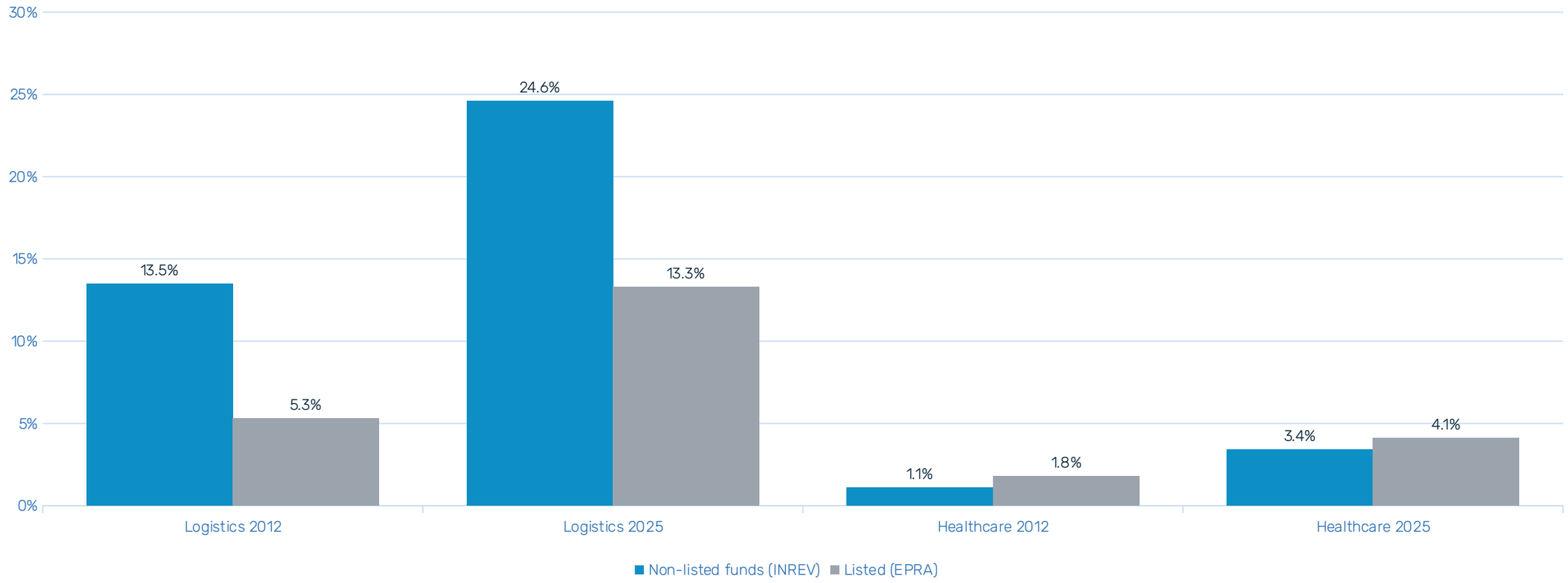
- **Enter.** Listed shares give exposure to a new sector within days, in any size and across several operators and countries.
- **Learn.** Listed companies report rents, occupancy and values every quarter or half-year, which shows how the sector reacts to the economy and to interest rates.
- **Build.** Once the sector is understood, select managers and partners and commit to non-listed funds or platforms.
- **Shift.** As the non-listed capital is drawn, reduce the listed position. What remains is the liquid part of the allocation.

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The listed market is not always first

European non-listed funds hold more logistics, and added more, than listed companies; in healthcare both routes are small

Europe: sector share of portfolio, %



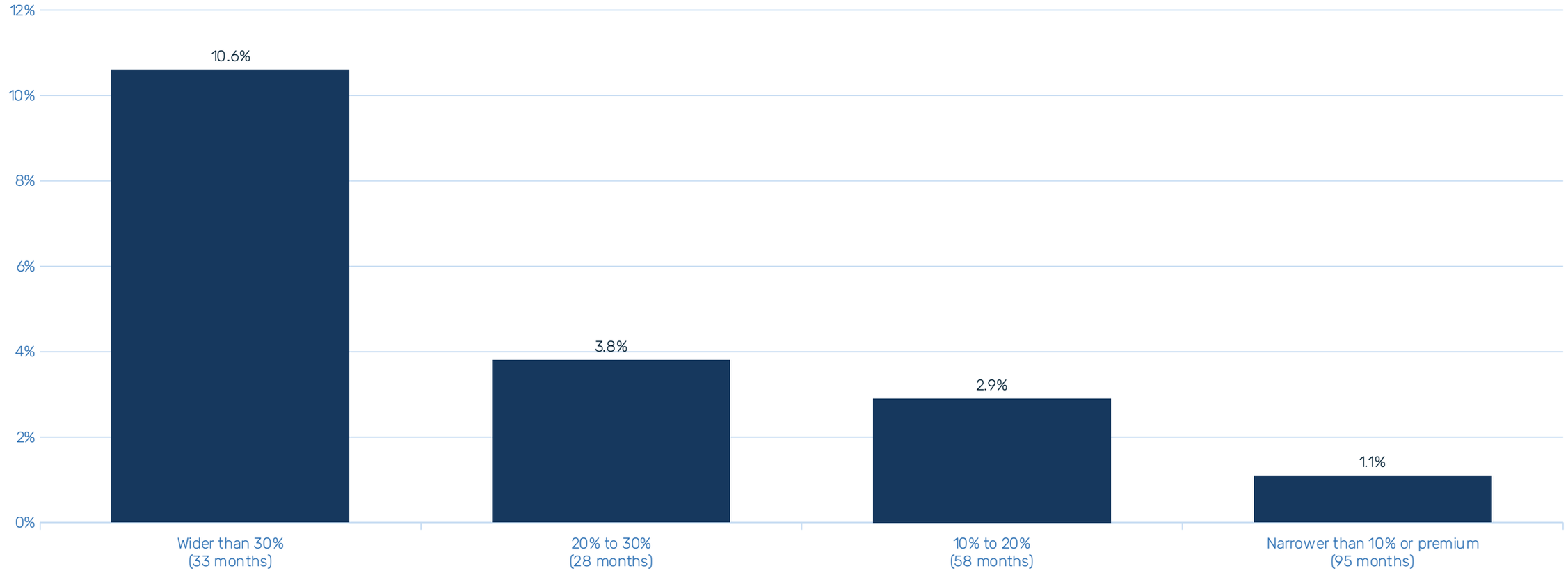
Source: EPRA, INREV, Macro Real Estate

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Very wide discounts were followed by high returns

A discount wider than 30% occurred in 33 of 214 months, in three episodes: 2008–09, late 2011 and 2022–23

European listed real estate: total return over the next three years by starting discount to NAV, % p.a., 2006–2023



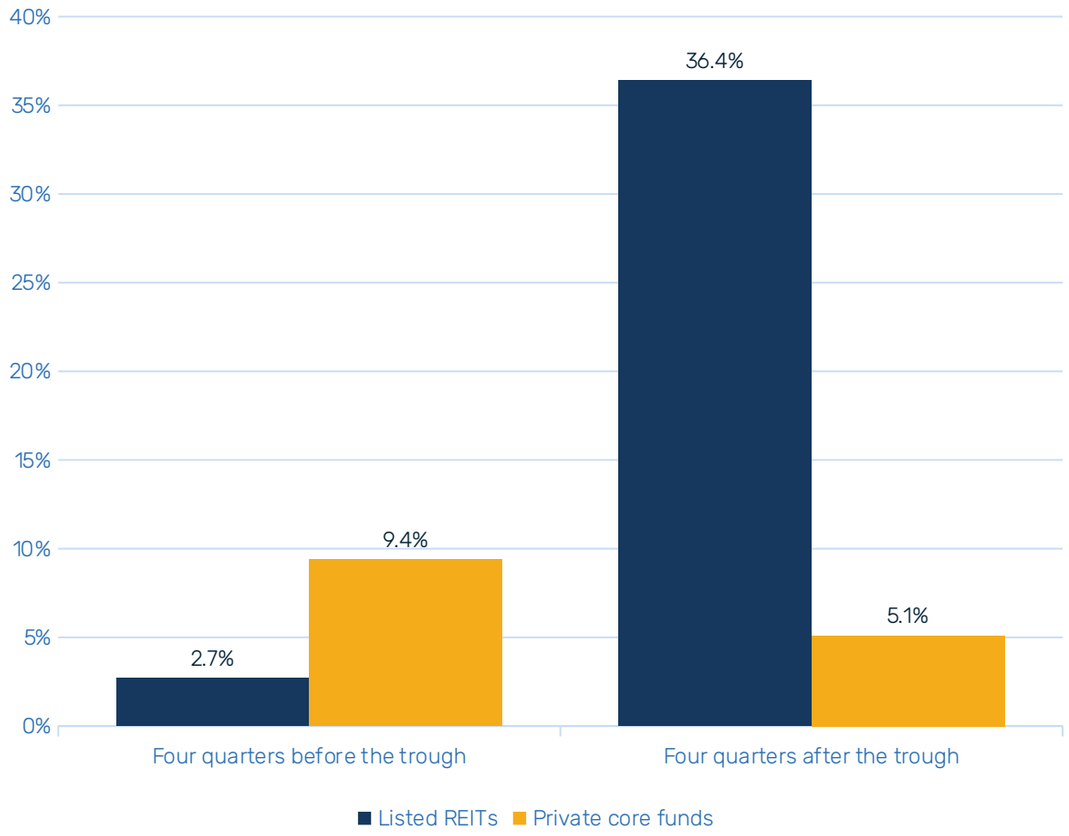
Source: EPRA, FMP, Macro Real Estate

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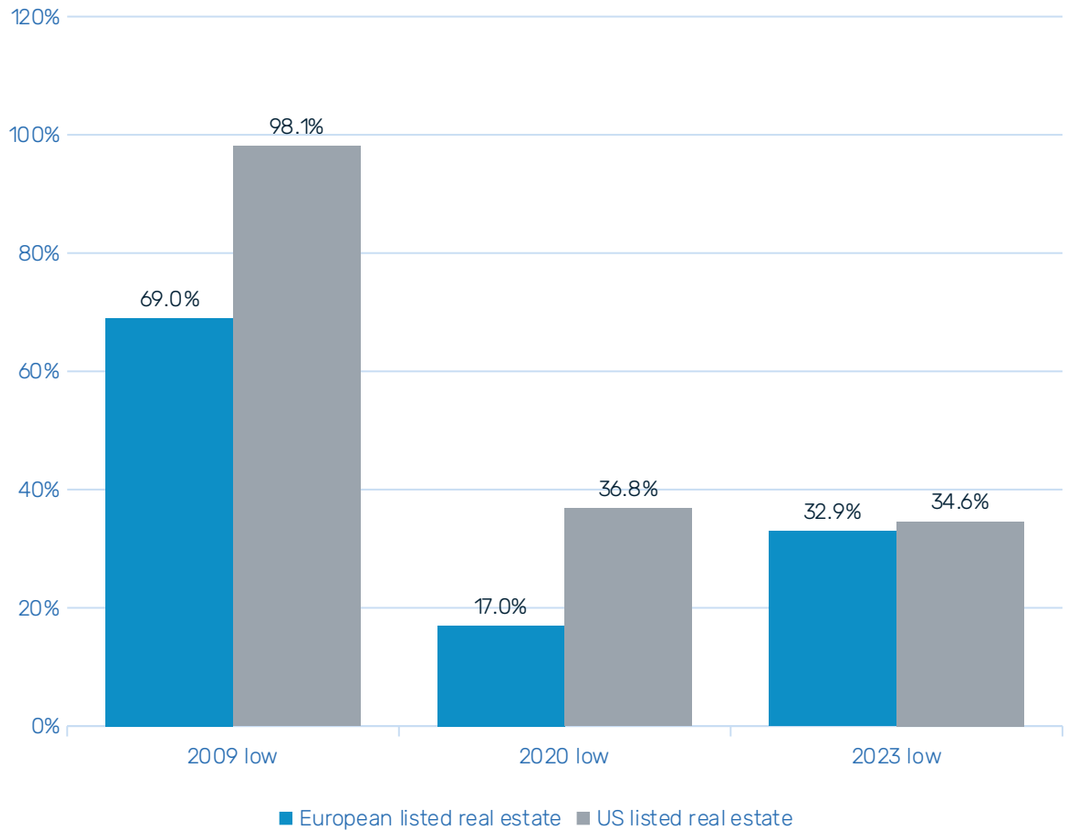
After past troughs, listed returns came first

US: REITs returned 36.4% in the year after a relative trough, private core funds 5.1%

US: average total return around 11 relative troughs, 1978–2022, %



Total return in the 12 months after each market's own month-end low, %



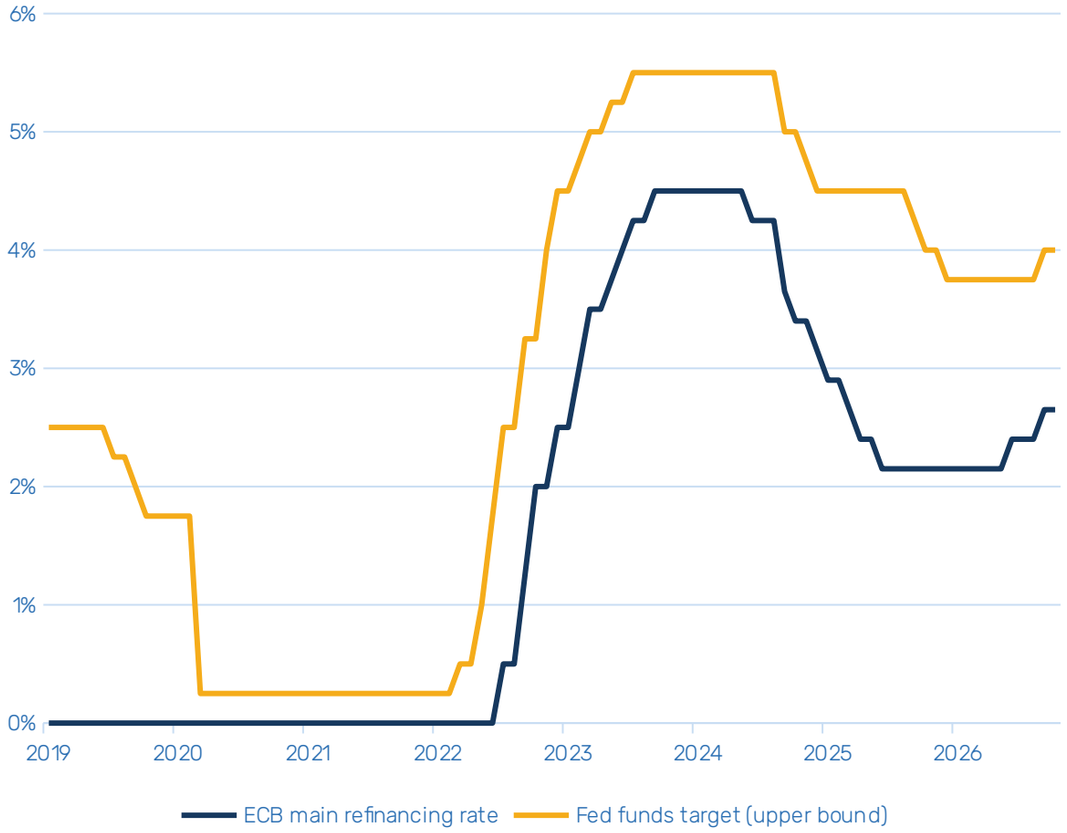
Source: Nareit, FMP, Macro Real Estate

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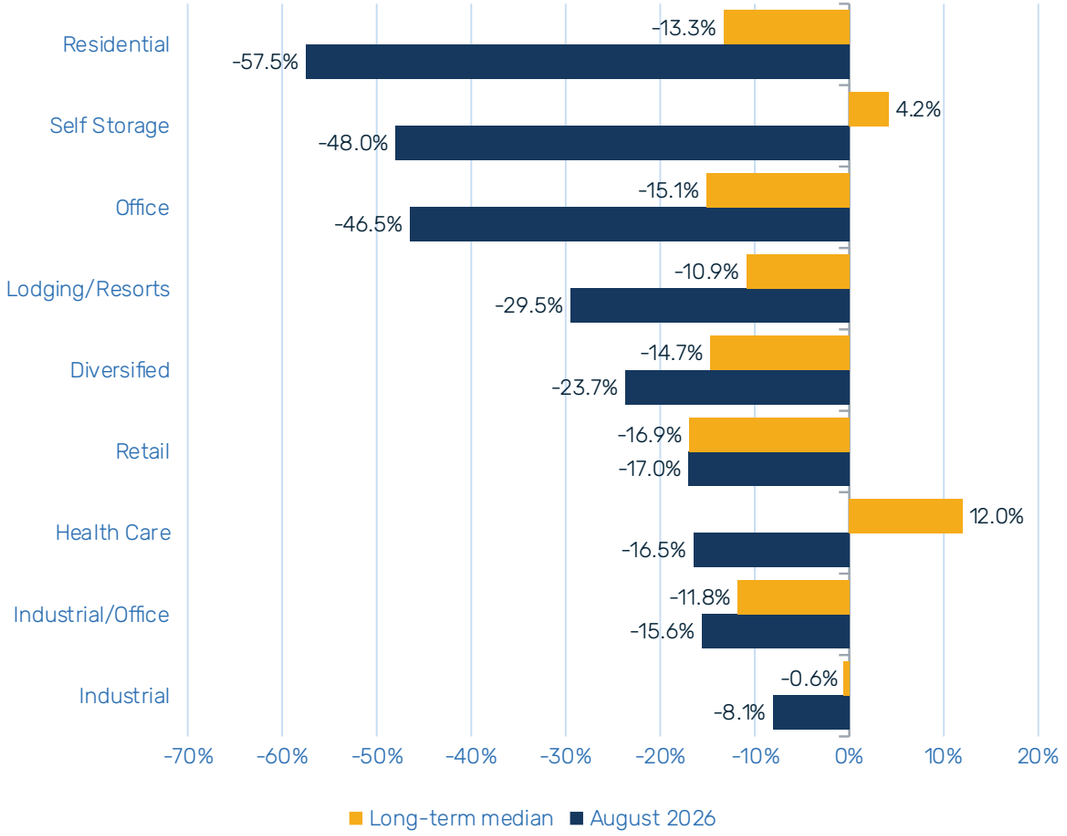
Where are we now? The signals disagree

The European discount to NAV is 32.6% against a long-term average of 15.1%, but the ECB has raised its policy rate twice this year

Central bank policy rates, %



Europe: premium or discount to NAV by sector, %



Source: Trading Economics, EPRA, Macro Real Estate

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A dynamic hybrid: what to hold when

The tilt is made with the listed part and with new commitments; fund holdings cannot be moved quickly

Phase	What you see	Tilt	Why
Early cycle	Discount to NAV wider than 30%, policy rates at or close to their peak, few transactions	More listed	Share prices have repriced, fund valuations have not
Mid cycle	Discount narrowing towards its long-term average of 15%, valuations stabilise, transactions return	Balanced	The two routes are priced close to each other
Late cycle	Shares at a premium to NAV, listed companies issue equity, yields compressed	More non-listed	Share prices run ahead of valuations: the premium was 20.1% in December 2006
Today in Europe	Discount of 32.6%, but policy rates rising again	Add listed gradually	The price is lower, the timing is uncertain

Source: EPRA, Macro Real Estate

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One team, not two silos

Separate listed and non-listed teams have been described as the more common set-up; these investors run the two together

Investor	Set-up	What they do	Source
NBIM (Norway)	Listed and unlisted managed as one strategy since 2019, roughly half each at the end of 2023; moving to a fully integrated strategy in 2026–2028	For any exposure it evaluates whether listed or unlisted gives the better risk-adjusted return	NBIM, IPE
APG (Netherlands)	One real estate strategy, about 60% private and 40% listed (2022)	Does not differentiate between listed and private	Nareit
Bouwinvest (Netherlands)	One integrated team for listed and non-listed since 2012	Uses listed to fill gaps where no suitable non-listed product is found, and to use the cycle	IPE, Nareit
MN (Netherlands)	Listed real estate managed since the 1990s within the real assets framework	The same top-down approach for listed and non-listed	PREA
Texas ERS (US)	Listed is 25% of the real estate target	Added USD 200m of listed in March 2021, withdrew USD 250m in March 2022	Nareit

A question for the room: who in your organisation decides whether the next euro of real estate goes into a listed company or into a fund? If the answer is nobody, the two are managed in silos.

Source: NBIM, IPE, Nareit, PREA, Macro Real Estate

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What can go wrong

The objections, and what we answer

- Volatility lands in the quarterly report. Agree a separate risk budget and benchmark for the listed part before it is needed, not during a drawdown.
- The discount can close through lower NAVs. Size the tilt so that a further fall in share prices can be lived with, and add in steps.
- Leverage differs: the EPRA LTV was 38.7% at the end of 2025, INREV fund gearing 24.6%. Compare and report the two routes at the same leverage.
- For insurers, Solvency II charges listed real estate at 39%, against 25% for direct property and 49% for unlisted funds. The long-term equity treatment lowers the listed charge to 22%.

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What to do

Five steps for an institutional real estate portfolio

- Put listed and non-listed real estate under one team with one sector and country view, as NBIM, APG and Bouwinvest have done.
- Set a base weight for listed and a range around it, e.g. 30% with a range of 20–40% of the real estate allocation.
- Tie the tilt to something observable: the discount to NAV, the direction of policy rates and listed equity issuance.
- Enter new sectors through the listed route, senior housing and care homes above all, and build the non-listed exposure once the sector is understood.
- Measure both routes over at least five years, and report them at the same leverage.

Macro Real Estate helps investors design and run a combined listed and non-listed real estate strategy. macrorealestate.com

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Sources and methods

- Discount to NAV: EPRA, FTSE EPRA Nareit Developed Europe, Europe ex UK (forward returns) and sector indices, month-end, December 1989 to 31 August 2026. Sector medians run from March 2005 (lodging from March 2016, industrial/office from March 2015).
- SEGRO: month-end share price from FMP, December 2019 to August 2026; adjusted NAV per share (EPRA NTA basis) at each balance sheet date from the company's results announcements, held constant until the next one.
- Volatility of listed, non-listed and direct real estate: Lin and Zhao, University of Reading for EPRA (2026), Table 2; FTSE EPRA Nareit Developed Europe, MSCI Pan-European Quarterly Property Fund Index and MSCI Pan-Europe All Properties, quarterly returns.
- ETF returns, volatility, drawdown, correlations: dividend-adjusted month-end prices from FMP for iShares European Property Yield (IQQP.DE, Europe ex UK), iShares STOXX Europe 600 (EXSA.DE), Vanguard Real Estate (VNQ) and SPDR S&P 500 (SPY), February 2006 to 9–10 November 2026, local currency; drawdowns are measured on month-end data. Forward returns: IQQP.DE over the following 36 months by starting discount (214 overlapping observations).
- Market capitalisation: FMP, month-end from January 2012, 18 logistics and 13 healthcare companies listed today in the US and Europe, plus Cofinimmo until its merger into Aedifica in July 2026; European values converted at ECB reference rates. Other delisted or acquired companies are not included and membership grows over time.
- Policy rates: Trading Economics (ECB main refinancing rate, Fed funds target upper bound), month-end to October 2026.
- Published research and statements: NBIM Discussion Note 3-2023 and Strategy 28; Oxford Economics for EPRA (2024); Moss and Gu, EPRA (2025); EPRA and INREV, One Real Estate Universe (2026); EPRA Monthly Market Review (October 2026); CEM Benchmarking for EPRA (2023); Hoesli and Oikarinen (2021); Ling and Naranjo (2015); Baum and Moss (2013); Nareit (2022–2026), IPE and PREA for APG, Bouwinvest, MN, NBIM and Texas ERS; NCREIF (Q2 2026); Cohen & Steers (2024); Bluerock (2023); Eurostat EUROPOP2025.