

UNLOCKING DIVERSIFICATION: THE STRATEGIC ROLE OF REAL ESTATE IN MULTI- ASSET PORTFOLIOS

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EXECUTIVE SUMMARY

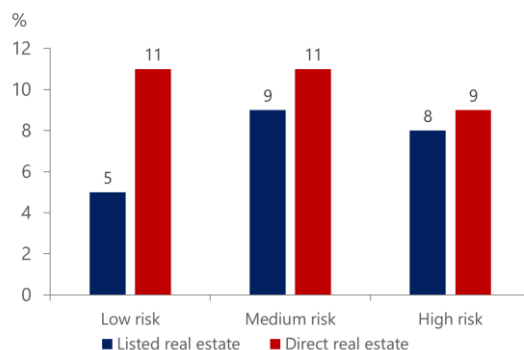
This report builds on a 2019 study by Oxford Economics examining whether a larger dedicated allocation to listed real estate could aid European investors in better achieving their strategic objectives. We revisit that research and reassess the optimal role of listed real estate in a mixed asset portfolio in the wake of significant global economic shocks, including the COVID-19 pandemic, the Russia-Ukraine conflict and the current high interest-rate environment. We also address a topic that has received relatively limited attention to date: the advantages of gaining exposure to real estate through both listed and direct investment vehicles.

Direct real estate provides relative stability and income generation, while listed real estate offers liquidity, diversification, and professional management expertise. While the two asset classes exhibit some degree of correlation, a number of factors including asset composition, valuation differences and market dynamics contribute to divergences in their performance over time. With both asset classes having low to moderate correlations with other asset classes, this suggests that both listed and direct real estate could potentially perform valuable diversifying roles in an investment portfolio.

In order to examine this issue in more depth, we used historic data on asset returns spanning the past 21 years to determine optimal allocations to an investment portfolio over this historic period. Our findings show that real estate receives a sizeable allocation in investor portfolios across differing levels of tolerance of risk (as measured by standard deviation). Allocations to direct real estate are fairly consistent across risk thresholds, albeit somewhat lower for a high-risk investor; in contrast, listed real estate allocations are highest for the medium/high risk investor and somewhat lower for investors with low risk tolerance.

Allocation to listed real estate rises and direct falls with higher risk

**Average optimal allocation to real estate (2001-2023)
(5-year holding period)**



Source: Oxford Economics calculations

As differences in sectoral composition influence the relative performance of headline indices, we also examined the potential for listed and direct real estate to act as complimentary investments at a sector level. Our analysis reveals that portfolios incorporating both direct and listed real estate consistently exhibit higher

risk-adjusted returns than portfolios with only direct real estate. Retail is the only category where risk-adjusted returns were not improved with the addition of listed real estate, which may reflect sector's recent struggles and steep discounts applied in public equity markets.

Looking to the future, we then examined whether strategic allocations to real estate should be retained as the economic landscape continues to shift. With this in mind, we utilized the Oxford Global Economic Model (GEM) to investigate the outlook for real estate vis-à-vis other assets under alternative scenarios for the global economy over the period to 2030.

Real estate has a consistent place in all scenarios.

Allocation to real estate by scenario (%) over Q3 2024 - Q4 2030						
Scenarios >	Downside		Baseline		Upside	
	Listed	Direct	Listed	Direct	Listed	Direct
Low risk tolerance	0	5	6	14	6	15
Medium risk tolerance	3	10	10	14	15	15
High risk tolerance	3	10	10	11	13	15

Source: Oxford Economics calculations

Our results show that real estate consistently features in optimal portfolios across all three scenarios, underscoring its role as a powerful portfolio diversifier. Notably, our results confirm that investors with a medium or higher risk tolerance should increase their exposure to listed real estate, while direct real estate has a more consistent place in portfolios across all three risk levels.

The specific features of direct and listed real estate also lend themselves to so-called 'core-satellite' investment strategies, where a core portfolio of stable, income-generating assets is complemented by satellite investments used to potentially enhance returns or diversify risk. For example, a core investment in direct real estate might include well-located, income-producing assets with a history of stable rental income and appreciation potential; satellite investments in listed real estate could then involve more specialized or higher-risk real estate sectors like healthcare facilities, data centres, or international properties.

Overall, our analysis underscores how a combination of both direct and listed assets creates a well-rounded real estate allocation that can enhance portfolio resilience and performance across various market environments. With listed real estate often overlooked in favour of direct investment alternatives, our findings support the conclusions of our earlier report that a reassessment of strategic allocations may be warranted to adequately capture the unique benefits of both asset classes.

1. INTRODUCTION

Oxford Economics were commissioned by EPRA in August 2019 to undertake a study into whether European investor portfolios would benefit from higher weightings to listed real estate. Our findings supported the view that a larger dedicated allocation to this asset class would help these investors to better meet their strategic objectives. But the study was released just months before the European economy began to be hit by successive crises, including the COVID-19 pandemic, the Russia-Ukraine war, and soaring inflation.

These global events have hit European real estate hard, with higher interest rates putting downward pressure on prices while the pandemic shifted fundamental underlying dynamics in the market. Against this background, it would seem timely to revisit our earlier analysis to examine whether these developments may have changed the study's conclusions. Using latest data on asset performance, we therefore re-examine the role of real estate within an optimal diversified portfolio historically, before then assessing the potential future performance of investment portfolios under alternative scenarios for the economy to see whether real estate consistently features in optimal allocations.

According to research by CEM Benchmarking, over the 2005-2021 period, European institutional investors had allocations to real estate averaging around 8% to 9% of their portfolios¹. Within these holdings, direct real estate features most prominently, with average weightings three-times higher than listed real estate. In light of the apparent investor preference for direct vs. listed real estate, we have broadened the scope of our optimal portfolio analysis to examine whether these alternative real estate assets could have potentially complimentary roles.

This study offers compelling evidence supporting an ongoing role for real estate within a diversified multi-asset portfolio in a pan-European context. Moreover, our findings support the view that a blend of both direct and listed real estate generally contributes to improved risk-adjusted returns.

The report is organized as follows:

- **Section 2** compares the performance and features of direct and listed real estate in Europe, as well as vis-à-vis other asset classes.
- **Section 3** examines the role of real estate in an optimal portfolio using historic data.
- **Section 4** estimates the role of real estate in a mixed asset portfolio over the years to 2030 under alternative scenarios.
- **Section 5** presents a short conclusion.

Additional detail on methodology and data sources are presented in the Annex.

¹ [Beath, A. D., & CEM Benchmarking. \(2023\). Asset Class Allocations and Returns: Large European Institutional Investors, EPRA.](#)

2. RECENT PERFORMANCE OF EUROPEAN REAL ESTATE

Real estate is widely recognised as offering a unique combination of equity and bond-like properties. The bond-like attributes of real estate stem from the steady income streams generated by contractual cash flows, primarily derived from lease obligations; simultaneously, their equity-like returns are driven by the long-term appreciation of asset values. As a result, real estate has continued to receive consistent allocations in European portfolios despite the uncertain and volatile economic backdrop, as investors seek to benefit from its diversifying properties.

Box 1: Measuring returns to direct real estate investment

Before analysing the relationship between direct real estate and other asset classes in more depth, it is important to ensure that the data we use to measure performance adequately reflects the returns received by investors. With that in mind, we adjusted the standard direct real estate index to account for two issues (additional methodological detail is available in the Annex):

1. The standard MSCI All Property Total Return Index is a valuation-based measure – it is generally accepted that this results in smoothing of the data series, as valuers tend to anchor on previous valuations. As a result, the index understates the volatility of direct real estate holdings. We therefore “de-smoothed” the series by overlaying with a volatility profile acquired from a transactions-based measure.
2. The total return index is an unleveraged measure of property returns – however, investors almost always employ leverage (borrowed money) to purchase a property. This increases potential returns, although also increasing volatility and potential losses. Although we do not know the average leverage used in European direct real estate holdings, we do know the leverage ratios underpinning listed real estate. We therefore applied the listed real estate leverage ratios to our (transactions-adjusted) direct real estate index to create a leveraged direct real estate measure.

The analysis presented throughout this report is based on this transactions-adjusted, leveraged, direct real estate total return index series.

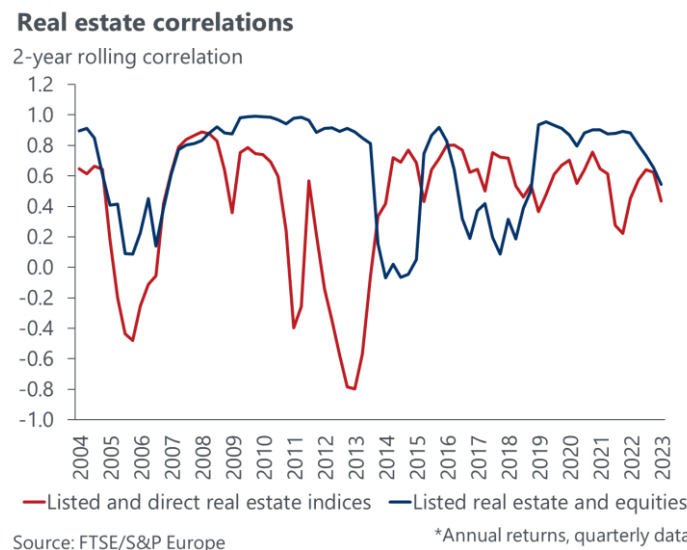
2.1 THE RELATIONSHIP BETWEEN DIRECT AND LISTED REAL ESTATE RETURNS

While the potential benefits of investing in real estate are widely acknowledged, there has been relatively less attention given to the advantages of gaining exposure through both listed and direct real estate investment vehicles. Listed and direct real estate both offer real estate exposure to an investor, but there are

important differences in these asset classes which mean that they could potentially play complimentary roles in an investor portfolio.

Listed real estate investments offer investors flexibility of access in a manner similar to equities, allowing for quick buying and selling with almost instantaneous execution. Consequently, listed real estate investments tend to experience greater price fluctuations than the underlying direct real estate assets, as the market reacts to new information and developments while also being influenced by broader equity market sentiment.

Fig. 1. In the short term, listed real estate tends to be more strongly correlated with equities than direct real estate



Similar to other equities, pricing of listed real estate is generally based on forward-looking prospects, such as anticipated new leasing agreements or investment transactions. In contrast, direct real estate transactions proceed at a much slower pace and often involve thorough due diligence across multiple stages. Moreover, values of direct real estate assets are assessed relatively infrequently, and appraisals are often retrospective.

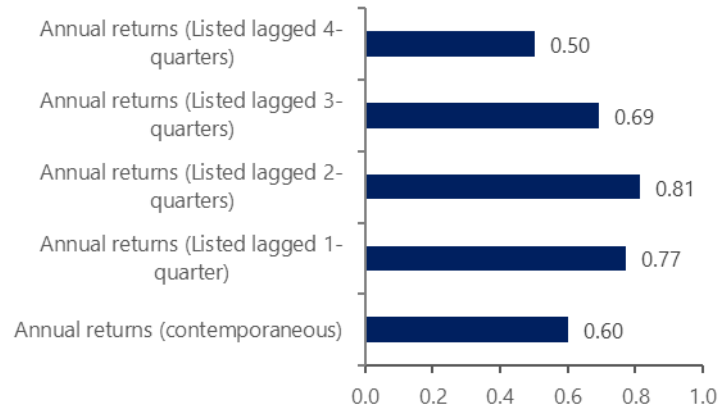
Due to these differences in market dynamics and trading characteristics, the contemporaneous correlation between listed and direct real estate is volatile and can be relatively weak. As shown in Figure 1, quarter-to-quarter movements in listed real estate tend to have a closer correlation with equities than direct real estate.

That said, to the extent that these markets represent different approaches to evaluating equivalent underlying assets, one may expect that listed real estate valuations would lead valuations in the direct real estate market. This is supported by Figure 2, which shows the correlation with direct real estate strengthens notably when examining two-quarter lagged returns of listed real estate. This confirms that there is in fact a fairly strong correlation between the two asset classes, albeit

operating with a time lag. It also implies that pricing of listed real estate may provide some insight into the future direction of direct real estate returns and potentially offer relative value opportunities, notwithstanding the tendency for equity markets to overreact to incoming information.

Fig. 2. Direct and listed real estate correlations are stronger with a time lag

Listed and direct real estate correlations



Note: All returns are quarterly frequency

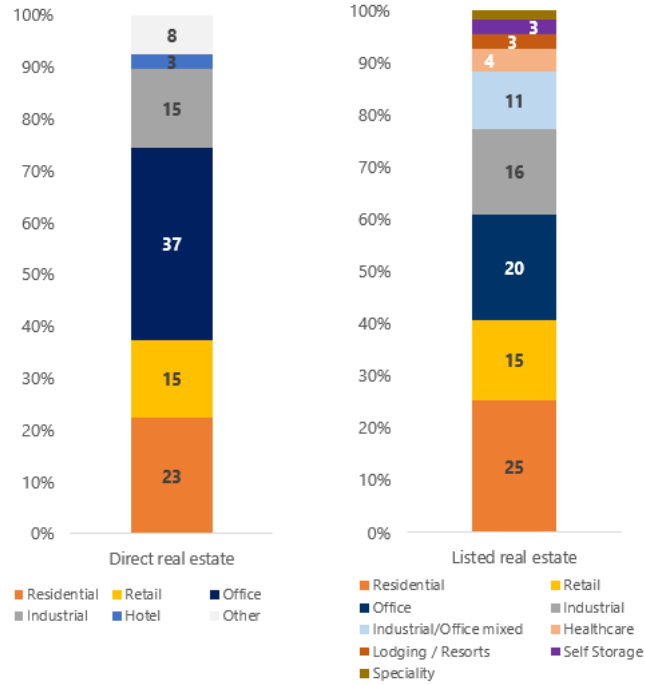
Correlation coefficient

Source: FTSE/MSCI/Oxford Economics

While the lagged correlation between the two asset classes is positive, however, the strength of the association is still less than perfect. Besides differing market structures, another reason for these differences in performance between direct and listed real estate composite indices is the contrast in their underlying sectoral compositions, as illustrated by Figure 3. As discussed in the next section, real estate performance has varied greatly across sectors, so performance of headline indices may also be expected to diverge when underlying compositions differ.

Fig. 3. Direct and listed real estate indices have a distinct composition

Sectoral composition of European real estate indices

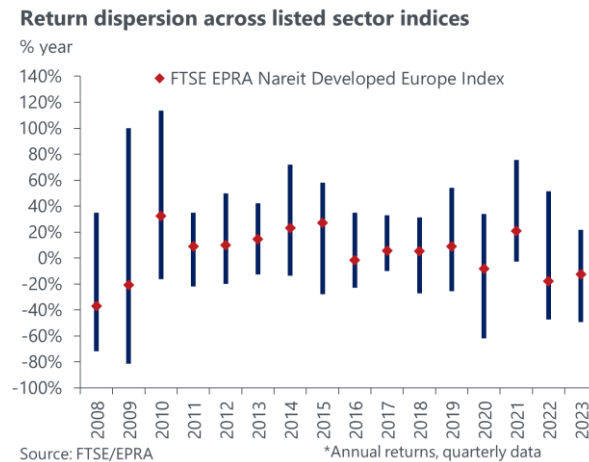


Source: EPRA/MSCI

2.2 REAL ESTATE PERFORMANCE ACROSS SECTORS

The performance of headline (listed and direct) real estate indices can conceal wide variations in performance of underlying sectors. The historic annual dispersion in returns across European listed real estate sectors is illustrated by Figure 4.

Fig. 4. Annual returns vary widely across listed real estate sectors



Source: FTSE/EPRA

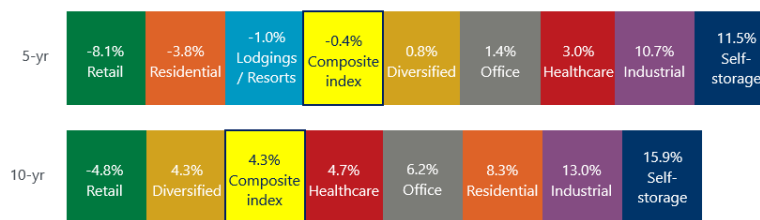
*Annual returns, quarterly data

Indeed, it is widely recognised that certain sectors have faced difficulties in recent years as the pandemic shifted underlying dynamics in the market. This included offices, which faced challenges stemming from a structural shift toward remote working. Similarly, the retail sector has experienced lasting effects from the pandemic, which accelerated the transition of consumers to online shopping and e-commerce. This shift is evident in the sharp decline in foot traffic observed in urban city centres and shopping complexes -- for example, Oxford Street in London was still reporting² footfall one-fifth lower than pre-COVID levels as of late-2023.

Conversely, real estate sectors that cater to the growing e-commerce economy have demonstrated robust performance over the past few years. For example, industrial real estate properties such as warehouses, have benefited from higher demand for logistics facilities; additionally, investments in niche industrial real estate such as data centres have also thrived, driven by the increasing reliance on online services and advancements in artificial intelligence (AI). Self-storage has also seen rapid growth from a small base, supported by mobility of workforce and increased adoption of micro-apartments in cities. These sectors have been the strongest performers even when we examine listed real estate trends over the past decade (Figure 5), emphasising how the pandemic merely accelerated structural shifts that were already underway in the market.

Fig. 5. Storage and industrial sectors have recorded strong growth

Europe: 5 and 10-year compound annual return by listed real estate subsector



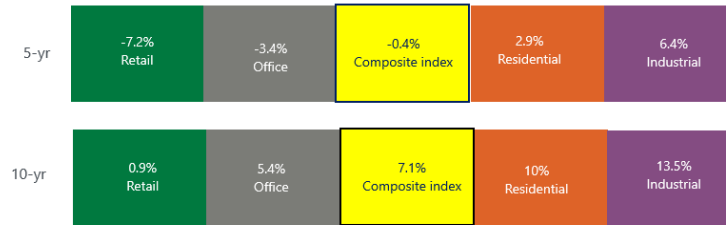
Source: EPRA/Oxford Economics

Similar trends are discernible in direct real estate, particularly with the industrial sector outperforming relative to other sectors. While sector returns are still not exactly the same in the listed and direct real estate market, this reflects various factors including different underlying property exposures, liquidity profiles, valuation methodologies and operational and management differences. We delve into these differences further in Section 2.3.

² [Can London's Oxford Street be revived? Financial Times, 08th September 2023.](#)

Fig. 6. The industrial sector has driven direct real estate growth

Europe: 5 and 10-year compound annual return by direct real estate subsector



Source: MSCI/Oxford Economics

The standard disclaimer, “past performance does not guarantee future results”, is familiar to anyone with an interest in investing. With this in mind, and considering the constantly evolving market landscape, it would seem unwise to structure a real estate investment portfolio solely based on past winners at the sector level. Rather, a common strategy for real estate is so-called ‘core-satellite’ investing, which can be applied to both direct and listed assets.

The core-satellite strategy refers to investment in a core portfolio of stable, income-generating assets, while satellite investments are used to potentially enhance returns or diversify risk. In the case of listed real estate, core investments might involve acquiring shares in established real estate investment trusts (REITs) or other publicly traded real estate companies with a focus on stable, income-producing assets such as commercial office buildings, shopping malls, or residential properties; satellite investments could then involve more specialized or higher-risk real estate sectors like healthcare facilities, data centres, or international properties. For direct real estate investments, core properties might include well-located, income-producing assets with a history of stable rental income and appreciation potential – for example, multifamily residential buildings, office complexes in prime locations, or retail centres in high-traffic areas; satellite investments could involve development projects, value-add opportunities, or niche sectors like student housing or industrial warehouses.

2.3 OTHER DIFFERENCES BETWEEN LISTED AND DIRECT REAL ESTATE

Beyond sectoral differences in headline indices, there are also several other important distinctions between listed and direct real estate investments that can influence investment decisions. These are summarised in the table below.

Fig. 7. Qualitative comparison between listed and direct real estate

Feature	Listed real estate	Direct real estate
Liquidity & speed of transactions	<p>The liquid market for listed real estate means that buying and selling units of a real estate fund can be nearly instantaneous. The listed real estate market thereby offers an efficient means to invest in the sector in a timely manner. Listed real estate can also serve as a proxy exposure to the market while an investor seeks a direct real estate purchase or if a suitable direct real estate investment in the sector is unavailable. This flexibility allows investors to effectively manage their real estate allocations and optimize their investment strategy based on market conditions and investment opportunities.</p>	<p>The market is relatively illiquid, the matching of buyers and sellers can be a relatively slow process, and the associated transaction paperwork and due diligence can often take several months or even years.</p> <p>Over such a long time period, investor preferences or the market backdrop could shift considerably. It could also mean a long wait before an investor can start to earn returns on the assets they have chosen to invest in or receive the proceeds from the sale of an asset.</p>
Transaction size	<p>Listed real estate transactions allow for small capital outlays in real estate assets, as funds allow for fractional investment into an asset by a large pool of investors. By enabling fractional investment, real estate funds allow investors to participate in the real estate market without the need for large capital investments.</p>	<p>Direct real estate investments necessitate 'lumpy', high-value investments. The allocation of a large sum of money to a single property concentrates risk exposure within a single asset.</p>
Counterparty risk	<p>Listed real estate transactions typically entail low counterparty risk due to the equity-like nature of the market. As listed real estate transactions occur on public exchanges with established trading mechanisms and regulatory oversight, investors can have confidence in the</p>	<p>In the case of direct real estate, the multiple stages involved in a transaction mean that it could fall through due to a variety of reasons including due diligence standards not being met or mismatched expectations between the buyer and seller.</p>

	execution and settlement of their transactions.	
Volatility	Given the higher liquidity of listed real estate, their returns tend to be more volatile as investor sentiment and market information are instantaneously reflected in prices. The volatile equity market sentiment also feeds through to listed real estate returns primarily through its impact on risk perception, interest rates and liquidity preferences.	The lower liquidity of direct real estate investments contributes to slower price movement within this market segment.
Control	Listed real estate is a much more passive investment than direct real estate. Investing in listed real estate typically involves purchasing shares of real estate investment trusts (REITs) or real estate mutual funds, where investors have limited control over the individual properties held within the portfolio. Since the management and decision-making authority reside with the REIT or fund managers, investors have little say in property-level decisions such as leasing, property management, or capital expenditures which could be used to influence value.	Direct real estate investments provide investors with a high level of control over their assets, including the ability to directly manage properties, make decisions regarding renovations or improvements, and negotiate lease terms with tenants. This control allows investors to implement strategies to maximize the value and performance of their real estate holdings. That said, owners must also deal with the associated costs, time commitment and stress of managing the properties.

<p>Diversification – sectoral and geographic</p>	<p>Listed real estate allows investors to diversify across a wide range of real estate sectors, including specialized sectors such as data centres, storage centres, healthcare facilities, and infrastructure projects. These sectors may be difficult for individual or institutional investors to access directly, but they are more readily available through listed real estate investment vehicles. This diversification across sectors helps spread risk and can enhance portfolio resilience.</p> <p>Listed real estate investments also offer investors the opportunity to gain exposure to real estate markets beyond their geographic location. By investing in real estate investment trusts (REITs) or real estate mutual funds with diverse property holdings, investors can access real estate markets across the globe and benefit from geographic diversification, reducing concentration risk associated with local market conditions.</p>	<p>Achieving diversification through direct real estate investments tends to be more difficult. It often necessitates substantial pools of capital and specialized expertise. For instance, individual retail investors may lack the requisite knowledge and resources to engage in the investment and management of niche real estate sectors such as self-storage facilities and data centres.</p> <p>While direct real estate can be undertaken in many geographies, the due diligence necessary and potential legal complexities could be a deterrent to undertaking investments. The transaction costs associated with cross-border investments will also likely be much higher and the number of properties one would have to invest in to be truly diversified geographically would likely be prohibitive.</p>
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The different characteristics of listed and direct real estate mean that the appropriate mix of investments may ultimately depend on an investor’s specific investment strategy, volume of funds, and the underlying real estate opportunity.

Investing in direct and listed real estate can also offer different tax advantages which could influence investor choice and allocation. For instance, investors in direct real estate could claim depreciation deductions on the property’s value over time, reducing taxable income – this is particularly advantageous for income-producing properties. Alternatively, dividends received from listed real estate, which are often listed on stock exchanges, may qualify for favourable tax rates, like qualified dividends from stocks. These advantages however can vary depending on factors such as jurisdiction, specific tax laws, and individual circumstances.

It is worth noting that the listed real estate market still covers only a fraction of the overall real estate market in Europe - for instance, according to a 2020 study³, EU listed property companies and REITs own only 20% of EU commercial property. This indicates that a large portion of the European commercial real estate market is held outside of listed property companies and REITs. To achieve comprehensive exposure and capitalize on the full spectrum of opportunities in the European real estate market, this suggests that professional investors should consider both direct and listed real estate investment vehicles.

2.4 PERFORMANCE OF REAL ESTATE RELATIVE TO OTHER ASSET CLASSES

Modern portfolio theory shows that the goal of improved risk-adjusted returns in multi-asset portfolios can be achieved by investing in asset combinations that have little or no correlation. As market conditions evolve over time, a diverse group of assets will perform differently in different market regimes, dampening the overall volatility of the portfolio and generating more consistent returns over the long-term. Analysing the performance of direct and listed real estate relative to various other asset classes over a long timeframe can therefore provide valuable insights into their diversification benefits, helping to inform investment decisions and portfolio allocation strategies.

Fig. 8. Summary statistics on performance of asset classes⁴

Total Returns by Asset Class, Dec 2002 - Dec 2023							
	Equities - Broad Market	Government Bonds	Corporate Bonds - Investment Grade	Corporate Bonds - High Yield	Diversified Commodities	Listed real Estate	Direct real estate
Summary Statistics							
Arithmetic Average growth rate	7.5%	2.4%	3.2%	8.6%	3.6%	8.3%	7.5%
CAGR	5.0%	2.4%	3.1%	7.0%	1.9%	5.9%	4.3%
Standard Deviation	19.3%	5.5%	6.5%	17.1%	19.7%	24.1%	20.7%
Sharpe Ratio	0.19	0.18	0.27	0.33	0.03	0.19	0.14
Correlation between annual returns							
Equities - Broad Market	1.00						
Government Bonds	0.06	1.00					
Corporate Bonds - Investment Grade	0.47	0.75	1.00				
Corporate Bonds - High Yield	0.61	0.36	0.78	1.00			
Diversified Commodities	0.29	-0.17	0.04	0.26	1.00		
Listed Real Estate	0.76	0.36	0.71	0.65	0.29	1.00	
Direct real estate	0.37	-0.04	0.20	0.10	0.35	0.60	1.00

Source: EPRA/Refinitiv/MSCI

Figure 8 illustrates many of the 'classic' features of asset class correlations commonly observed in other studies. These include the weak correlation between equities and government bonds, higher correlation between riskier assets such as equities and high-yield corporate bonds, and relatively weak correlation between commodities and other assets.

³ [The case for non-listed real estate in multi-asset and in the real estate portfolio is even stronger than before](#), INREV, Jan 2021.

⁴ All asset classes have a geographical scope of Europe (except for diversified commodities). The indices used for each asset category have been set out in the annex.

As noted previously, listed real estate shares many of the characteristics of equities. As a result, listed real estate often shares the strongest correlation with equities, reflecting the common exposure to broader market dynamics and investor sentiment. In contrast, direct real estate investments operate in a different market environment, contributing to relatively weaker correlations with other asset classes. Given the differences between listed and direct real estate investments and their moderate positive correlations with each other, this suggests that they could potentially both serve as distinct and effective portfolio diversifiers.

It may be tempting to conclude that an investor can maximise returns by adopting a dynamic investment strategy where the mix of assets is adjusted based on shifting market conditions. But numerous studies have shown that attempting to time the market is a fundamentally flawed approach. One such study is the annual “Mind the Gap” report from Morningstar⁵, which contrasts total fund returns (the growth in fund value with a buy-and-hold investment) with actual investor returns (incorporating the amount of assets in the fund in different periods to account for the effect of flows). Persistent negative gaps are found across markets between the returns investors actually experienced and reported total returns, indicating that investors’ timing of entries and exits detracts value compared with a hypothetical buy-and-hold investment. Across asset classes, the most volatile categories typically caused investors to lose more of their returns to timing of inflows and outflows, underscoring the tendency for investors to be influenced by short-term market fluctuations.

This emphasises the benefits of applying a disciplined and patient style of investment over a long time-horizon. With this in mind, the next chapter examines the optimal allocations that would have maximised long-term investment returns in a mixed asset portfolio over the past 21 years.

⁵ <https://www.morningstar.com/en-uk/lp/mind-the-gap>

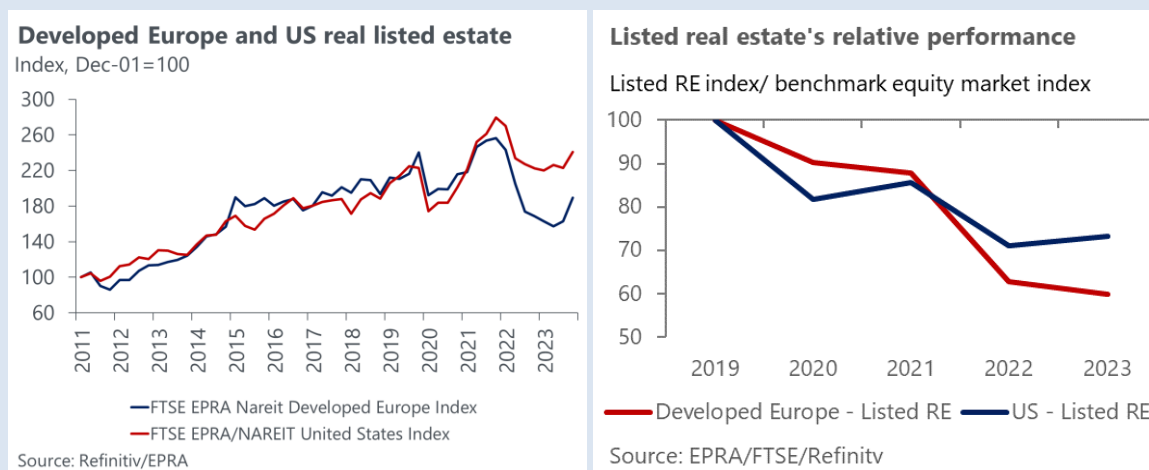
SPECIAL FOCUS BOX: COMPARING EUROPEAN AND US REAL ESTATE MARKETS

With its well-developed listed real estate offerings, it is instructive to compare the US real estate market with Europe.

For some years after the Global Financial Crisis (GFC), the performance of Developed Europe's real estate market closely tracked that of the US, reflecting broader economic trends and market dynamics. However, notable divergences in performance emerged between the two markets in the wake of the pandemic. Specifically, Figure 9 shows that the Developed Europe listed real estate index experienced a deeper decline than the US from late 2021 and this relative underperformance persisted into 2023. In part, this may reflect Europe's struggle to recover from the economic setbacks brought on by the pandemic, whilst the US economy has outpaced its counterparts.

That said, one commonality between the two markets has been a relative underperformance of listed real estate relative to the broader equity market. This relative underperformance is more notable for Developed Europe, with listed real estate around 40% behind the market by late 2023; but a similar trend is also visible in the US, with a 30% underperformance observed over the same period.

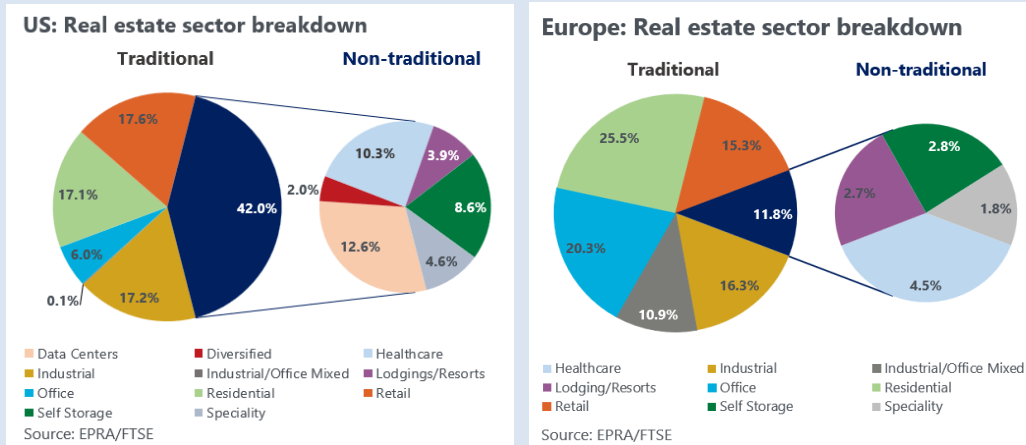
Fig. 9. US and Developed Europe real estate performance has diverged



In addition to the favourable growth environment, the composition of the US listed real estate market also contributes to its outperformance (Figure 10). Compared to Developed Europe, the US boasts a more extensive and diversified listed real estate market, with a substantial allocation to alternative property sectors. These non-traditional sectors – including speciality (composed of niche subsectors such as student housing, community housing, and research centres), data centres, healthcare, and self-storage – constitute a sizable and expanding portion of the index, amounting to 42% as of 2024. As highlighted in the main report, many of these non-traditional sectors have benefited from structural shifts in the global economy, so their relatively high weighting has helped to underpin the resilience of the headline US listed real estate index.

Conversely, the Developed Europe market exhibits a lower share (approximately 11.8%) of its listed real estate universe in non-traditional sectors.

Fig. 10. The US market has a relatively larger share of ‘non-traditional’ listed real estate



In terms of asset allocation to real estate, there are some differences between investor behaviour in the US and Europe. As noted earlier in the report, European institutional investors had average allocations to real estate averaging around 8% to 9% of their portfolios, with direct real estate accounting for around three-quarters of these assets. In the US, available evidence suggests that the average pension fund allocates a similar share to real estate (8.7% in 2021)⁶, although around 90% of these holdings are direct real estate and only 10% listed real estate (REITs).

⁶ Carlo, A., Eichholtz, P., & Kok, N. (2021). Three Decades of Global Institutional Investment in Real Estate. Available at SSRN 3802518.

3. REAL ESTATE IN AN OPTIMAL PORTFOLIO – HISTORIC ANALYSIS

The previous section presented evidence that both direct and listed real estate could potentially perform valuable diversifying roles in a portfolio. In this section, we undertake a more rigorous analysis using dynamic portfolio optimisation simulations to determine whether both these assets should have had consistent allocations within optimal multi-asset portfolios in recent history.

3.1 OPTIMAL PORTFOLIO ALLOCATIONS

To ensure that our analysis reflects real-world constraints and practical considerations, we incorporated minimum and maximum limits on asset allocations within the portfolios. These constraints are designed to account for factors such as investment mandates, funding requirements, and liquidity constraints that investors may face in practice. By imposing these limits, we aim to create portfolio allocations that are feasible and realistic for investors with varying risk preferences and investment objectives.

Fig. 11. Portfolio weight limits by risk tolerance level

Asset class	Weight limits by asset class (%)					
	Low Risk		Medium Risk		High Risk	
	Min	Max	Min	Max	Min	Max
Equities (broad)	20	50	30	60	40	70
Government bonds	20	50	10	40	-	30
Corporate bonds (IG)	-	10	-	20	-	20
Corporate bonds (HY)	-	20	-	10	-	10
Commodities	-	10	-	10	-	10
Listed real estate	-	15	-	15	-	15
Direct real estate	-	15	-	15	-	15

We estimated three portfolios with weight limits representative of low, medium and high levels of risk-tolerance, as described in Figure 11. Subject to these limits, optimal portfolio weights for each risk level were then chosen to reflect different percentiles in the distribution of standard deviations across the entire efficient frontier (which is an allocation resulting from maximising the returns for a given level of risk) for each estimated portfolio. The three risk levels we examine are:

- Low risk: 20% percentile of standard deviations
- Medium risk: 50% percentile of standard deviations
- High risk: 80% percentile of standard deviations

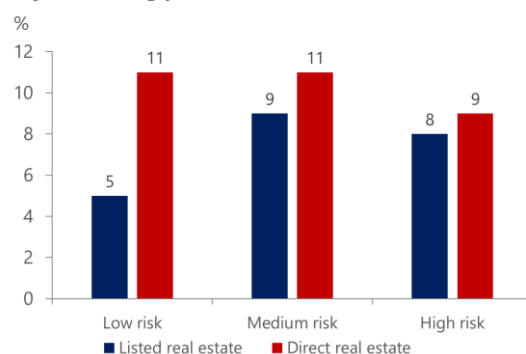
By choosing the 20th, 50th, and 80th percentiles for determining optimal portfolio weights, we encompass a wide range of risk levels, allowing for flexibility based on investor risk preferences, risk management mandates and historical market volatility patterns.

Optimal asset allocations were re-estimated on a rolling quarterly basis for holding periods of five years and eight years across the entire data sample. The minimum five-year holding period was chosen as this is the minimum generally recommended by financial advisors for non-cash investments. Re-estimating the portfolio allocations on a rolling basis then ensures that we are gauging performance across a variety of market conditions over the sample period.

After conducting the optimisation across the available choice of assets, the average allocations that emerged from the portfolio optimisation process with a five-year window were as shown in Figure 12. Our results indicate that both direct and listed real estate receive significant average allocations in the estimated optimal investor portfolios across all three risk levels. Allocations to direct real estate are fairly consistent across risk thresholds, albeit somewhat lower for a high-risk investor; in contrast, listed real estate allocations are highest for the medium/high risk investor and somewhat lower for investors with low risk tolerance.

Fig. 12. Allocations to real estate by risk threshold

Average optimal allocation to real estate (2001-2023)
(5-year holding period)



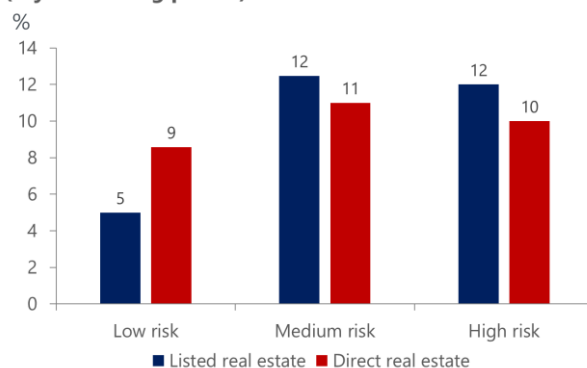
Source: Oxford Economics calculations

Figure 13 presents the results of this portfolio optimisation exercise with an eight-year holding period. This was chosen based on evidence that the optimal holding period for direct real estate is somewhat longer than other asset classes at around 8 years⁷. We find the average allocation to listed real estate increases for medium/high risk levels for this longer holding period, which may be reflective of how a longer-term focus allows investors to ride out short-term market fluctuations from more volatile asset classes. For the low-risk investor, allocations to listed real estate are unchanged, while direct real estate allocations are somewhat lower.

⁷ For example, [Collett, D., Lizeri, C., & Ward, C. \(2003\). Timing and the holding periods of institutional real estate. *Real Estate Economics*, 31\(2\), 205-222.](#)

Fig. 13. Allocations with an 8-year holding period follow a similar pattern

**Average optimal allocation to real estate (2001-2023)
(8-year holding period)**



Source: Oxford Economics calculations

As shown in Figure 14, listed real estate received a positive allocation across most periods in all three portfolios. The share of positive allocations increased with risk tolerance as well as holding period. For a holding period of eight years, listed real estate was found to have a positive allocation for 85% and 83% of the time in the medium and high-risk portfolios. In contrast, over a 5-year holding period, as risk tolerance increases, the proportion of positive allocations to direct real estate decreases. This indicates a tendency among investors to gravitate towards riskier assets that might promise higher short-term returns. However, when extending the holding period to eight years, a different pattern emerges. Allocations to direct real estate remain relatively stable across all three levels of risk tolerance. This stability suggests a preference for the consistently strong positive long-term returns associated with direct real estate investments.

Fig. 14. Share of portfolios with positive allocations to real estate

Portfolios with a positive allocation to real estate (5-year holding period)		
Risk level	Listed real estate	Direct real estate
Low risk	40%	80%
Medium risk	63%	77%
High risk	62%	65%

Portfolios with a positive allocation to real estate (8-year holding period)		
Risk level	Listed real estate	Direct real estate
Low risk	40%	72%
Medium risk	85%	74%
High risk	83%	70%

Source: Oxford Economics calculations

The allocations resulting from dynamic portfolio optimization reflect investor preferences based on the risk/return profiles of various assets and their co-movement. However, it should be noted that this exercise does not account for other differences, such as liquidity, transparency, and differing tax implications, which can also play a significant role in shaping investor preferences.

3.2 REAL ESTATE SECTORS IN AN OPTIMAL PORTFOLIO

In light of the differing performance of real estate sectors, we now turn our attention to assess how combining exposure to both listed and direct real estate assets within specific real estate sectors can potentially improve risk-adjusted returns and enhance portfolio performance. This may be particularly relevant for investors targeting exposure to certain segments of the market, although it also provides broader analytical insights, allowing us to look beyond differences in sectoral composition of the headline indices.

Given the shorter time series of sector total return indices, we have analysed data for the post-GFC period (Mar-2010 to Dec-23). This still provides a long 14-year sample period that includes a number of significant market events including the Eurozone crisis, the COVID-19 pandemic, the Russia-Ukraine crisis and the recent inflationary surge in Europe.

We repeated the dynamic portfolio optimisation exercise described in section 3.1, but replaced the composite listed and direct real estate indices with sector-specific listed and direct real estate indices. Optimal asset allocations were re-estimated on a rolling quarterly basis for holding periods of five years, with weight limits for equities, bonds and commodities based on an investor with medium risk tolerance. With the maximum weighting for direct real estate set at 15%, we examined the impact of adding listed real estate to the portfolio (also with a 15% maximum weighting). We undertook this analysis for the four core sectors, examining one sector at a time and also a mixed⁸ real estate allocation (a balanced portfolio with an equal allocation to all four real estate sectors i.e., residential, office, industrial and retail).

The results are summarised in Figure 15, which compares Sharpe ratios across the various portfolios examined.

⁸ Portfolios E – Mixed refers to an equal allocation (3.75%) across the four sectors within listed and direct respectively, adding to a total allocation of 15%.

Fig. 15. Impact of adding listed real estate to portfolio performance

Sharpe ratios by portfolio	Direct RE	Listed + Direct RE
Portfolios A - Residential	0.69	0.91
Portfolios B - Office	0.68	0.68
Portfolios C - Industrial	0.92	0.99
Portfolios D - Retail	0.53	0.48
Portfolios E - Mixed	0.69	0.77

Source: Oxford Economics calculations

Our analysis reveals that portfolios incorporating both direct and listed real estate consistently exhibit higher risk-adjusted returns than portfolios with only direct real estate across almost all portfolio categories. Retail is the only category where risk-adjusted returns were not improved with the addition of listed real estate, which may reflect the relatively weak performance of the sector. Even a mixed asset portfolio (which allows for an exposure to all four core sectors) offers greater risk-adjusted returns when we allow for an allocation to both listed and direct real estate.

Overall, these results support the case for diversifying real estate exposure across both direct and listed assets.

4. ROLE OF REAL ESTATE IN A PORTFOLIO OVER THE YEARS TO 2030

The focus of preceding chapters has been on the role of real estate in an optimal portfolio based on historic market performance. We now look to the future to gauge whether strategic allocations to real estate should be retained as the economic landscape continues to shift. With this in mind, we have utilized the Oxford Global Economic Model (GEM) to investigate the outlook for real estate vis-à-vis other assets under alternative scenarios for the global economy over the period to 2030 (for an overview of the GEM framework, please refer to Annex II).

Reflecting the potential headwinds and tailwinds facing the global and European economy, the three scenarios we examined were:

Baseline: The global economy experiences a soft landing, with steady growth. This represents our central projection.

Central banks signal victory over inflation (Upside): Policy easing bolsters the global economy as inflation returns to target, central bank caution fades, and policy shifts to a stance more supportive of growth.

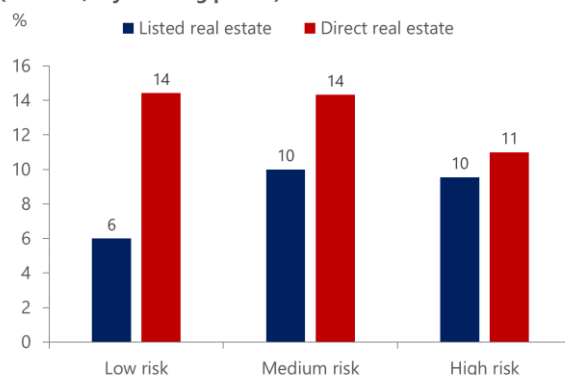
Higher for longer interest rates (Downside): High interest rates weigh on stock markets and house prices, as central banks are challenged by the inflationary fallout from persistent shipping disruption and the volatile geopolitical backdrop.

Additional detail on the assumptions underpinning each scenario is provided in Box 2. We used the GEM to forecast the implications for asset returns in each scenario, with a corresponding variance-covariance matrix also calibrated. We then used these inputs to examine the potential future performance of investment portfolios and to see whether real estate would consistently feature in the implied optimal portfolio allocations across different levels of risk tolerance. Consistent with the historical analysis, portfolios were subject to constraints on asset weightings as set out in Figure 11.

Focussing first on our baseline projections, the results of this exercise are illustrated in Figure 16, which sets out the optimal allocations to listed and direct real estate for each of the three risk tolerance levels.

Fig. 16. Optional allocations to real estate assets – baseline projections

Average optimal allocation to real estate (Q3 2024 - Q4 2030)
(Baseline, 5-yr holding period)



Source: Oxford Economics calculations

When we examine the baseline, the implied optimal allocations follow a similar pattern to that observed from the historic portfolio optimisation exercise. For a low-risk investor, our simulations indicate an optimal 6% allocation to listed real estate, but this rises to 10% in the medium and high-risk portfolios respectively. Conversely, the allocation to direct real estate stands at 14% in a low-risk portfolio but reduces to 14% and 11% in the medium and high-risk portfolios respectively.

These findings generally align with the risk and return characteristics of listed and direct real estate. As investors' risk tolerance rises, they exhibit a willingness to allocate capital to a riskier avenue of real estate investment (listed real estate) to potentially secure higher returns. Concurrently, the allocation to direct real estate diminishes with increasing risk tolerance, in favour of other riskier assets that present superior – albeit more volatile returns.

Fig. 17. Allocations in alternative (upside/downside) scenarios

Allocation to real estate by scenario (%) over Q3 2024 - Q4 2030						
Scenarios >	Downside		Baseline		Upside	
	Listed	Direct	Listed	Direct	Listed	Direct
Low risk tolerance	0	5	6	14	6	15
Medium risk tolerance	3	10	10	14	15	15
High risk tolerance	3	10	10	11	13	15

Source: Oxford Economics calculations

In an upside scenario, characterised by lower inflation rates and more favourable credit conditions (relative to the baseline), asset markets experience a strong uptick alongside a surge in investor confidence (Figure 17). This environment prompts a somewhat higher allocation to listed real estate of 15% and 13% respectively for the medium and high-risk investor. Allocations to direct real estate are consistently higher across all three risk levels at 15%.

In the downside scenario, elevated interest rates constrain gains in both equity and property markets. In this environment, investors would tend to seek refuge in safer,

defensive assets, resulting in reduced allocations to real estate and equities. A low-risk investor therefore has no allocation to listed real estate and a 5% to direct real estate; allocation to listed real estate increases for a medium and high-risk investor and stands at 3%. Conversely, direct real estate allocations rise from 5% to 10% as the investor risk appetite rises from low to medium and high risk.

More generally, our results underscore again how the specific features of direct and listed real estate can lend themselves to so-called 'core-satellite' investment strategies. For example, a core investment in direct real estate might include well-located, income-producing assets with a history of stable rental income and appreciation potential; satellite investments in listed real estate could then involve more specialized or higher-risk real estate sectors like healthcare facilities, data centres, or international properties. Combining both direct and listed assets in this way can thereby create a well-rounded real estate allocation that can enhance portfolio resilience and performance across a range of market environments.

ALTERNATIVE SCENARIOS FOR THE GLOBAL ECONOMY

A single forecast for planning ignores the complexities of the global economic environment, which is heavily influenced by external factors that are challenging to predict. To help with the planning process, it is therefore informative to explore the implications of alternative scenarios for the future path of the global economy. The key assumptions underlying each of the three scenarios we evaluated using the Oxford Global Economic Model are detailed below.

Baseline

The global economy experiences a soft landing, with steady growth and only a modest upward impact on inflation from Red Sea shipping attacks. Recent data have supported our view that the worst point for global growth may now have passed. But we don't expect a sharp rebound, not least given relatively unsupportive fiscal policy and the increase in interest rates over recent years which continues to filter through to households and firms. For most economies, headline inflation is unlikely to fall to target until well into 2024 or perhaps even later. But as inflation falls closer to target, central banks are likely to become more forward looking. After the massive overshoot of inflation, we expect central banks to tread cautiously, and the emphasis will be on bringing policy rates down slowly to less restrictive levels.

Downside scenario – Higher for longer interest rates

Government bond yields in the US and other major economies rise in the near term as monetary policy is tightened again. Core inflation proves stickier than expected as shipping disruption persists. At the same time, energy prices rise temporarily amid renewed concerns over a potential escalation of the Israel-Hamas war, adding to price pressures. Bond yields remain high throughout the scenario.

Higher interest rates weigh on financial and housing markets. As lower equity and house prices hit business and consumer demand, a tightening in credit conditions amplifies the fall-out. Rising interest rates and higher unemployment lead to falls in house prices. Falling property prices cause a rise in expected losses at mortgage lenders. They, in turn, curtail the provision of credit, weighing on potential supply even further. The result is a protracted period of sub-par global growth, with world GDP as much as 2.3% below baseline.

Upside Scenario - Central banks signal victory over inflation

Near-term inflation prospects improve further in this upside scenario. The expected inflationary impact of shipping disruption fails to materialise as attacks in the Red Sea come to an early end. With inflationary pressures continuing to ease more broadly, inflation expectations edge lower. Central bank caution fades as inflation quickly returns to target. Policy rates are cut substantially; within a year, US rates lie 100bps below baseline. Business and household sentiment improves. The boost to the global economy builds gradually. By H2 2025, world GDP lies 0.7% above baseline as businesses accelerate investment plans and consumer spending picks up. Investor sentiment also improves. Higher equities cause wealth effects and lower the cost of capital. Bond yields fall, boosting interest-rate sensitive sectors. Financial markets thus do strengthen, but gains are relatively contained given the sizeable rate cuts already priced in by investors.

5. CONCLUSION

Our analysis shows that combining both listed and direct real estate investments in a mixed asset portfolio can help investors achieve optimal risk-adjusted returns. Direct real estate provides stability and income generation, while listed real estate offers liquidity, diversification, and professional management expertise. Investing in listed real estate also allows investors easy access to various property types, including niche property types like self-storage facilities, warehouses, and data centres, which are well placed to benefit from recent structural shifts. This combination creates a well-rounded real estate allocation that can enhance portfolio resilience and performance across various market environments.

In today's dynamic investment landscape, where market uncertainties and volatility are prevalent, a diversified approach to real estate investing is essential. With listed real estate often overlooked in favour of direct investment alternatives, our findings support the conclusions of our earlier report that a reassessment of strategic allocations may be warranted to adequately capture the unique benefits of both asset classes.

ANNEX 1: DATA AND RESULTS

DATA SOURCES

The historic analysis presented in this paper was based upon total return indices denominated in Euros:

- Equities - Broad Market: S&P Europe Index
- Government Bonds: Bloomberg Barclays Pan European Aggregate Government A Index
- Corporate Bonds - Investment Grade: Bloomberg Barclays Pan European Aggregate Corporate index
- Corporate Bonds - High Yield: Bloomberg Barclays Pan-European High Yield Index
- Diversified Commodities: Bloomberg Commodity Index
- Listed Real Estate: FTSE EPRA Nareit Developed Europe Index
- Direct Real Estate: MSCI Pan European All Properties Total Return Index (adjusted as described below)

As described in the main text, we created a “transactions-adjusted, leveraged” direct real estate total return index for our analysis. The adjustment process took place in two stages:

1. **Transactions-based adjustment:** Starting with the standard MSCI Pan European All Properties Total Return Index, we imposed a volatility profile onto this valuation-based index. The volatility profile was implied from comparing the MSCI Pan European Transaction Linked Indicator with the underlying MSCI Pan European Valuation-based Index.
2. **Leverage adjustment:** We applied leverage to the transactions-adjusted index from (1) above, using leverage ratios⁹ from the FTSE EPRA Nareit Developed Europe Index together with a cost of debt based on the average historic European BBB corporate bond yield.

As set out below, the return and risk-adjusted performance of direct real estate is stronger when leverage is accounted for:

Risk and return performance, Dec 2002 - Dec 2023			
	Return (CAGR)	Standard deviation	Sharpe ratio
Listed real estate	5.9%	24.1%	0.19
Direct - Unleveraged & Transaction linked	2.0%	6.2%	0.09
Direct - Leveraged & Transaction linked	4.3%	20.7%	0.14

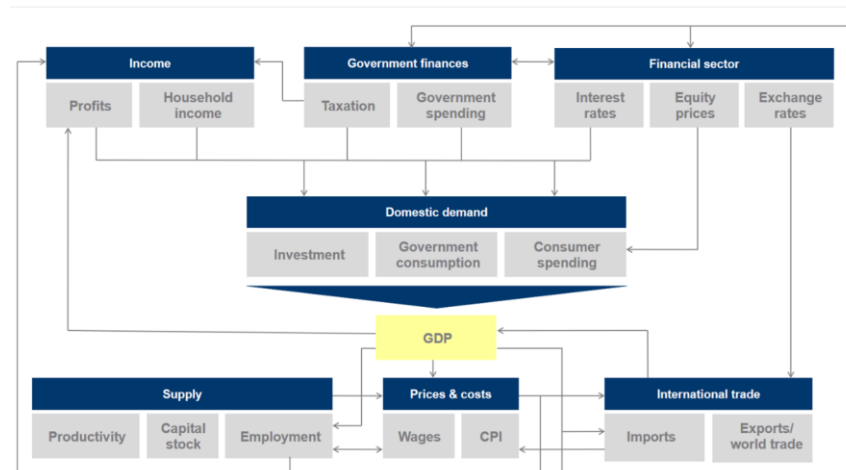
Source: EPRA/MSCI

⁹ The LTV figures are reported by the index constituent companies and compiled and aggregated by the Indexes & Research team at EPRA following the composition of the FTSE EPRA Nareit Developed Europe index. Reported LTV figures are not verified by EPRA and do not necessarily follow the methodology established by the EPRA BPR Guidelines.

ANNEX 2: THE OXFORD GLOBAL ECONOMIC MODEL

The key framework in which Oxford Economics' analysis is conducted is its own Global Econometric Model (GEM). The GEM replicates the world economy by interlinking 85 countries, 6 regional trading blocs and the Eurozone. These countries are interlinked through international trade in goods and services, competitiveness (measured by unit labour costs adjusted for the exchange rate), capital markets, interest rates and commodity prices. Historic data and forecasts are updated on a monthly basis by our country economists.

STYLISTED VERSION OF THE GEM



This Model—which is unique among the commercial economic consultancies—provides a rigorous and consistent structure for analysis and forecasting, and allows the implications of alternative global scenarios and policy developments to be readily analysed at both the macro, sectoral and regional level.

Asset prices are embedded in the Global Economic Model. Key financial variables include:

- **Interest rates:** policy rates, money market rates, sovereign yield curves, Swap curves.
- **Equity prices:** main stock market indices covered in each country.
- **Exchange rates:** spot rate against US\$ & € enabling calculation of other cross rates, and nominal/real effective exchange rates.
- **Commodity prices:** oil, natural gas, gold, and other metals.

The GEM also includes equations linking the performance of European listed and direct real estate with fundamental economic drivers. Using this, their future performance could be assessed under alternative economic scenarios.



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