The role of public and private strategies in real estate

J.P.Morgan
ASSET MANAGEMENT

Key takeaways for investors

1. The investible real estate market has expanded across time from traditional core to a wide range of extended sectors, making for a more diversified and resilient asset class that should occupy a permanent strategic position in most asset allocations.

2. The distribution of these sectors across public and private strategies remains uneven, and using public or private funds alone will be unlikely to capture the full benefits of the asset class.

3. An allocation that includes exchange-traded real estate investment trusts (REITs) and private real estate funds results in more efficient portfolios. Qualitative and quantitative frameworks suggest that investors could benefit from maintaining a strategic exposure to REITs, potentially up to one-third of their overall real estate allocation, with the remainder in private strategies.

4. The volatility and liquidity of publicly traded REITs, which historically have been seen as negative attributes, may provide return diversification and valuable tactical opportunities for investors who are prepared to adjust strategy in response.

A positive case for diversified real estate

Real estate is an essential component of diversified portfolios, offering key investment benefits — stable income, potentially attractive long-term real returns, resilience to inflation and portfolio diversification — that may be valuable to individual and institutional investors. What was once a private market geared toward institutions and wealthy individuals investing directly in individual properties is now dominated by various types of professionally managed pooled investment vehicles operating at scale across sectors and geographies.

Over time, real estate has grown as the traditional **core sectors** of office, retail, residential and industrial have been joined by a wide range of **extended sectors**, including self-storage, health care, data centers and telecommunications. In the past decade alone, the size of the professionally managed global real estate market has doubled, to USD 13.3 trillion.[1]

Investors seeking exposure to this opportunity set find two broad categories of investment vehicles at their disposal: exchange-traded public real estate investment trusts (REITs) and private real estate funds. Although the underlying assets are fundamentally similar, REITs and private funds exhibit significant differences with respect to sector exposures, return and risk targets, price volatility, leverage and liquidity.

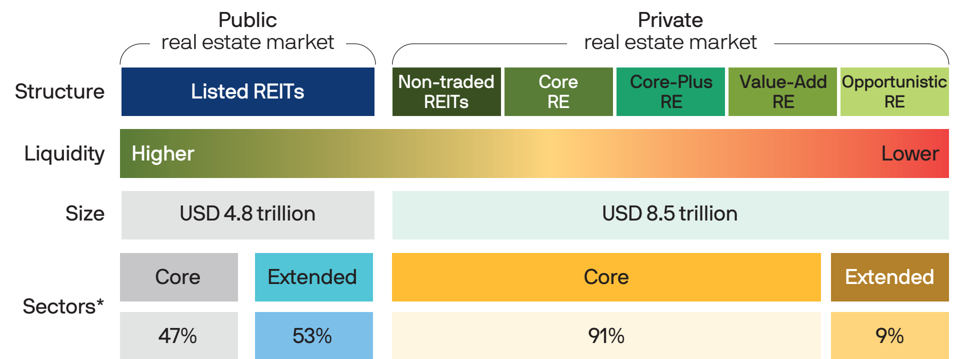
This paper consists of two parts: The first examines public and private real estate across multiple dimensions, seeking to identify their similarities and differences; the second offers a series of suggestions for optimizing portfolios by thoughtfully employing both categories. In our view, a strategic allocation to real estate can incorporate both private real estate and REITs in a manner that captures the unique strengths of each.

[1] Source: MSCI, J.P. Morgan Asset Management. The size of the professionally managed real estate market was USD 6.8 trillion at the end of 2013 and USD 13.3 trillion at the end of 2022. In 2022, the market size for the Americas was USD 5.9 trillion, for EMEA USD 4.0 trillion and for Asia-Pacific (APAC) USD 3.4 trillion. This is inclusive of the listed real estate market.

Exhibit 1 depicts today's real estate market across various dimensions, including public and private, vehicle types, liquidity characteristics and property sectors. In addition to accessing the numerous individual property sectors that fall within the core and extended market segments, investors can target a range of risk profiles commonly categorized as core, core-plus, value-add and opportunistic, with increasing risk and expected return across the spectrum. Multiple factors influence risk categorization, including the asset quality, location, leverage level, tenant quality and required improvements/developments on the property.

A large and diverse real estate market can serve diverse investor needs

EXHIBIT 1: THE REAL ESTATE MARKET AT A GLANCE



Source: MSCI, NCREIF, NAREIT, J.P. Morgan Asset Management; data as of December 2023. The size of the market is based on the size of the professionally managed global real estate investment market. "Listed REITs" represent the public real estate universe owned by REITs and real estate operating companies (REOCs) listed on public exchanges. *Sector weight is based on NAREIT for the public real estate market and NFI-ODCE for the private real estate market. Excludes the sector allocation in nontraded REITs. For illustrative purposes only. Bars shown in the exhibit are not drawn to scale.

Part one

Comparing public and private real estate

The assets held within core strategies share similar attributes across both public and private vehicles: These are generally high quality, well-located, well-leased, income-generating properties. To better understand the differences among them, it is helpful to isolate a number of specific characteristics that bring the distinct features of real estate investment into clearer focus:[1]

- Sector exposures
- Sector-level flexibility
- Use of leverage
- Investor profiles
- Liquidity
- Valuation
- Performance

Sector exposures

Private core real estate funds have historically invested in a narrow group of the largest sectors. The largest individual sector exposure (industrial) in the benchmark NCREIF Fund Index-Open End Diversified Core Equity (NFI-ODCE) index constitutes 33% of the total. The four traditional core sectors (retail, industrial, residential and office) together make up over 90%.[2] The sectors' vast sizes allow ample geographic and property-level diversification, but the limited exposure to noncore sectors can limit prospective growth.

In contrast, REITs offer more balanced exposure to the full spectrum of real estate, including extended sectors that are not well represented in private funds. The benchmark NAREIT index is far less concentrated: The largest sector (retail) is less than 15% of the index, and the four traditional core sectors together account for less than 50%. Extended sectors are well represented. **Exhibit 2** illustrates the sector distribution of private and public real estate indices.

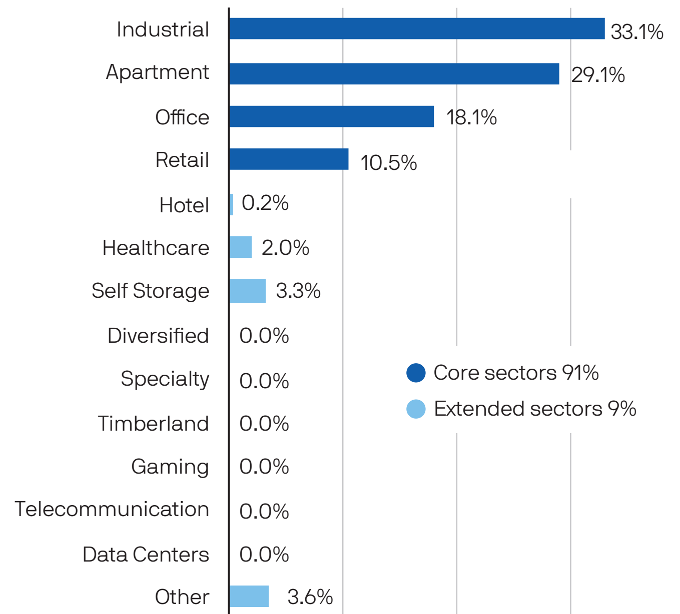
[1] We narrow this analysis in two ways. First, within private real estate, we focus on core real estate, given the similarity to publicly traded real estate (REITs), which includes a preference for income-generating assets, conservative use of leverage and an established index for performance comparisons. Second, we focus primarily on the U.S. real estate market, given its diverse and well-developed sectors, long history (allowing for more robust comparison) and less fragmented submarkets. While non-U.S. markets may have some distinct attributes, the fundamental value proposition is similar across regions.

[2] The NFI-ODCE index, which is widely used to track institutional private core real estate investments, specifies that eligible funds for inclusion in the index have at least 75% of their aggregate gross market value at effective ownership invested in office, industrial, apartment and retail property types. Private core real estate funds that do not subscribe to the NFI-ODCE index do not have this exposure limit.

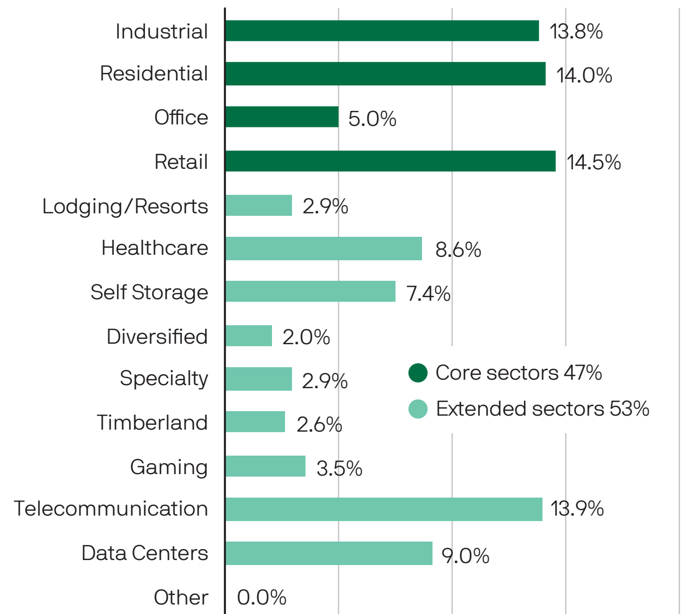
Private real estate focuses on a narrower investment universe

EXHIBIT 2: SECTOR EXPOSURES IN REITS AND PRIVATE CORE REAL ESTATE FUNDS

2A: PRIVATE CORE REAL ESTATE



2B: REITS



Source: NCREIF, NAREIT; data as of December 2023. Private real estate is based on NFI-ODCE, and REITs are based on the FTSE NAREIT All Equity REITs Index. Other category in private core real estate includes operating land, data centers and entertainment. Past performance is not an indicator of future performance.

Why such a pronounced difference in sector exposure? Private funds evolved to serve the needs of relatively conservative institutional clients, and they found an ample supply of suitable high quality assets within the legacy sectors of industrial, retail, apartment and office properties. Given the depth of these sectors and the long-term success of these strategies in meeting investor objectives, there was little need to explore the extended market.

However, this perspective is starting to change as some legacy sectors face structural challenges and many extended sectors mature. Private funds with large pools of capital are looking beyond individual assets to portfolio-level and total-entity transactions, including the outright purchase of existing REITs (both the properties and the operating platforms) to gain exposure to the extended sectors. The weight of extended sectors in the NFI-ODCE index has doubled compared with pre-pandemic levels; as evidence, all four of the student housing REITs have now been taken private.

Sector-level flexibility

Private core real estate funds' higher concentration in traditional core sectors is to some extent by design: Private core index guidelines (NFI-ODCE) require at least 75% of investments in the traditional four property types. In contrast, the public real estate universe faces no such constraints and includes a much wider range of real estate property types.

Given this greater flexibility and the fact that most REITs invest in a single property type, investors in REITs can create both diversified portfolios across property types and highly targeted, company- and sector-specific strategies. Further, compared with private core real estate funds, publicly traded REITs have the liquidity to allow investors to reallocate more efficiently.

In recent years, the broad range of property sectors represented in the REIT universe has offered investors more choice in constructing portfolios. This includes the ability to limit or avoid exposure to traditional sectors hit by exogenous shocks. For example, consider the negative impact of e-commerce on retail assets and the impact of hybrid work on the office sector. When these challenging conditions emerged, REIT investors were able to shift allocations to more promising market segments. Further, REITs that were impacted actively responded with asset sales and share buybacks.

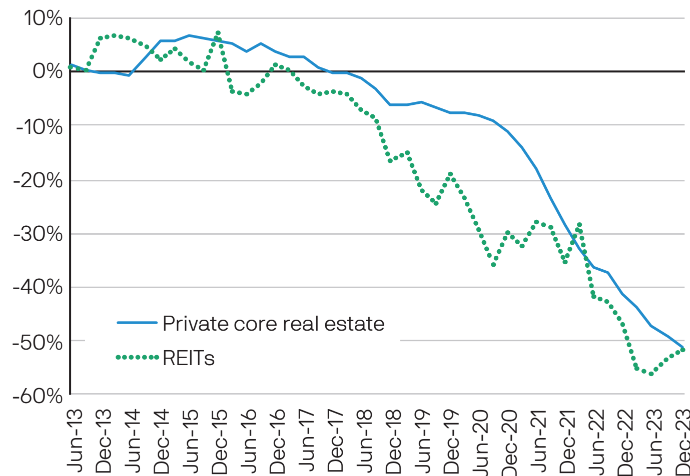
Private funds can also take such actions, but they are constrained by private index inclusion restrictions. It is worth noting that some of the decline in the index exposure to office and retail is attributable to market price declines, which can occur faster in the public markets.

Exhibit 3 compares private core real estate funds' and the REIT indices' exposure to office and retail properties prior to and through the pandemic era.

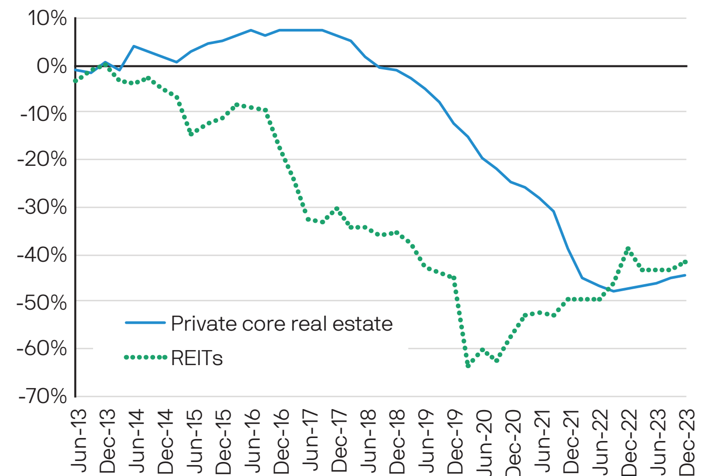
Public real estate investors appear more responsive to market conditions

EXHIBIT 3: OFFICE AND RETAIL SECTOR DECLINE RELATIVE TO THEIR DECEMBER 2012 WEIGHTS

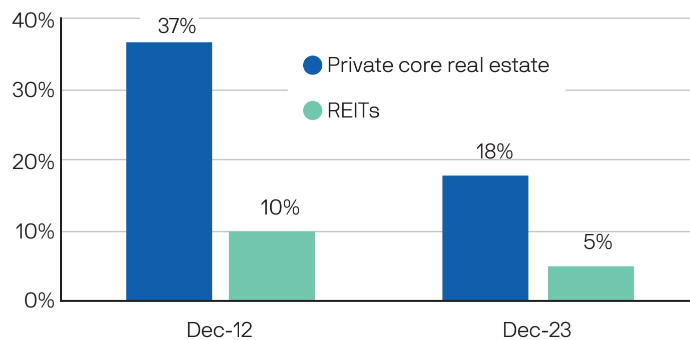
3A: OFFICE (% CHANGE FROM 2012)



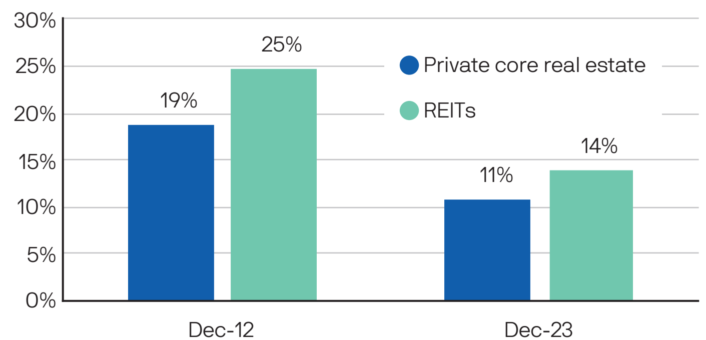
3B: RETAIL (% CHANGE FROM 2012)



3C: INDEX ALLOCATION WEIGHT IN OFFICE



3D: INDEX ALLOCATION WEIGHT IN RETAIL



Source: NCREIF, NAREIT; data as of December 2023. Private real estate data is based on NFI-ODCE, and REITs data are based on the NAREIT all-equity index. Available sector exposure data for private real estate starts from December 2012. Based on quarterly data. Past performance is not an indicator of future performance.

In the current environment, office assets have felt the greatest impact from capital market pressures, in part because their business fundamentals were already challenged by post-pandemic hybrid work arrangements. Overall, vacancy continues to tick higher and transaction market volumes have slumped. Yet we see signs that demand destruction is waning and the supply picture is improving, given falling construction and increased office conversions. We believe office still has a long way to go in its recovery. (Please refer to our SIAG paper "The post-COVID world comes into focus" for a deeper dive on office dynamics post-pandemic.[3])

Use of leverage

Virtually all real estate ownership structures involve debt, but the leverage profiles of public and private investment vehicles are quite different. While REITs can access the forms of financing available to private entities, they, unlike private funds, have the ability to issue and buy back shares, and — critically — the ability to issue long-term fixed rate public bonds.

In contrast, private funds typically finance properties individually[4] with bank loans or in the private debt market, at a relatively higher cost. Most private funds believe there is option value in financing assets individually rather than at the portfolio level. This approach provides flexibility in instances when a property's value falls below its mortgage value and the property can be put back to the lenders, minimizing the impact of loss on the total portfolio.

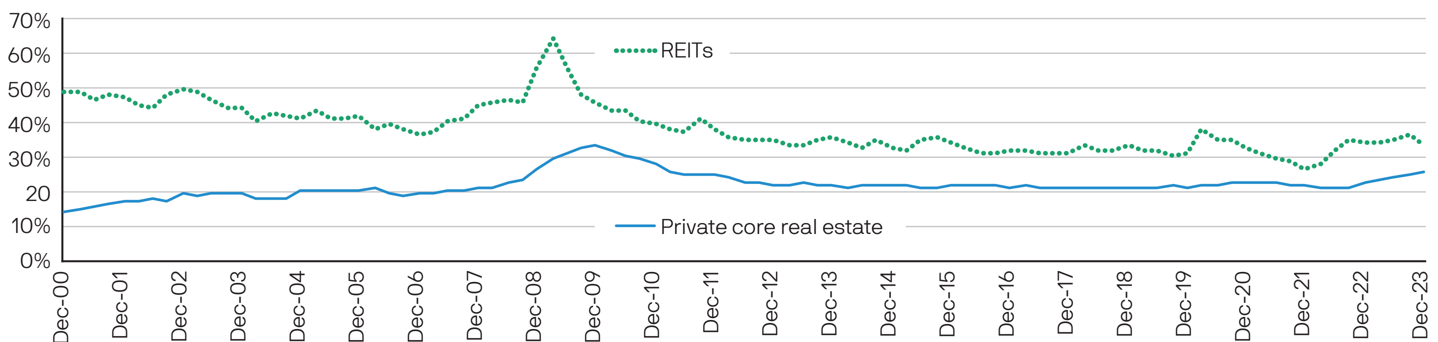
REITs have used their financing advantage to operate with higher leverage and lower costs than private core real estate. The gap between the two vehicles has narrowed over time, with REIT leverage declining in absolute terms as private real estate leverage has increased. Nonetheless, the REIT index currently employs roughly 33% leverage, compared with 26% in private core real estate funds, as shown in **Exhibit 4**.

[3] Source: J.P. Morgan Asset Management Strategic Investment Advisory Group, "The post-COVID world comes into focus," June 2023.

[4] Private funds have historically preferred individual property-level financing to limit their liability/recourse to that specific asset in the case of any debt servicing challenges.

Publicly traded REITs have employed higher leverage than their private counterparts

EXHIBIT 4: LEVERAGE PROFILES FOR PUBLIC AND PRIVATE CORE REAL ESTATE



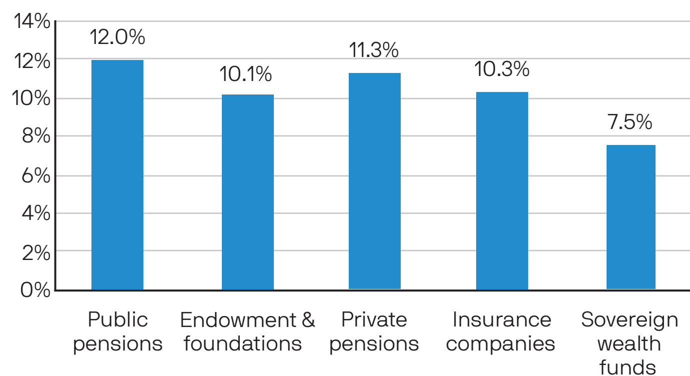
Source: NCREIF, NAREIT; data as of December 2023. Private real estate data is based on the NFI-ODCE, and REITs data is based on the NAREIT T-Tracker. Past performance is not an indicator of future performance. Leverage in REITs is measured as total outstanding debt to market assets and in private core real estate funds as the outstanding debt to gross assets.

Investor profiles

Private real estate investing has historically been dominated by institutions, including pension funds, insurers, nonprofits, sovereign wealth funds and family offices (**Exhibit 5**), all of which have long-term investment goals consistent with the return and liquidity profiles of the asset class. Recently, new structures, such as public non-listed REITs, have begun to open up private direct real estate investing to individuals.

Institutional investors maintain large allocations to real estate

EXHIBIT 5: REAL ESTATE ALLOCATION BY INVESTOR TYPE



Source: Cornell University, Hodes Weill & Associates 2023 Institutional Real Estate Allocations Monitor, November 2023. Survey is based on 175 institutional investors across 25 countries with over USD 10.2 trillion in total assets and real estate assets of ~USD 1.1 trillion. Real estate allocation includes both public and private real estate.

Traditional REITs have found a steady supply of equity capital in the public markets, sourced from both institutional and individual investors. The liquidity of REITs has also attracted investors looking to enter and exit the real estate market without contribution or redemption queues and thus more actively manage exposures across time. These attributes, along with the daily pricing mechanism in REITs, allow investors to react rapidly to market changes; this typically leads to faster and larger price adjustments when compared with private real estate.

Liquidity

In both public and private vehicles, the underlying assets lack liquidity. Even in the best of times, it can take months to execute the sale of a specific property and receive proceeds for distribution or reinvestment. REIT investments solve this problem by separating the price of the share from the value of the underlying portfolio. REITs trade freely on an exchange at prices that can deviate — in some cases significantly — from the value of the underlying properties. Thus, investors can trade in and out of positions without requiring the sale of an underlying asset.

Private core real estate funds typically offer liquidity on a quarterly basis, though it is not guaranteed but instead offered on a "best-efforts" basis. Liquidity can decline or be severely curtailed during periods of acute market stress — the global financial crisis (GFC) or the post-COVID downturn — when investors are looking to rebalance. These liquidity challenges have opened up a new secondary market for stakes in open-ended private core real estate funds. But this is a nascent market, not yet deep enough to provide a reliable source of cost-effective liquidity.

Valuation

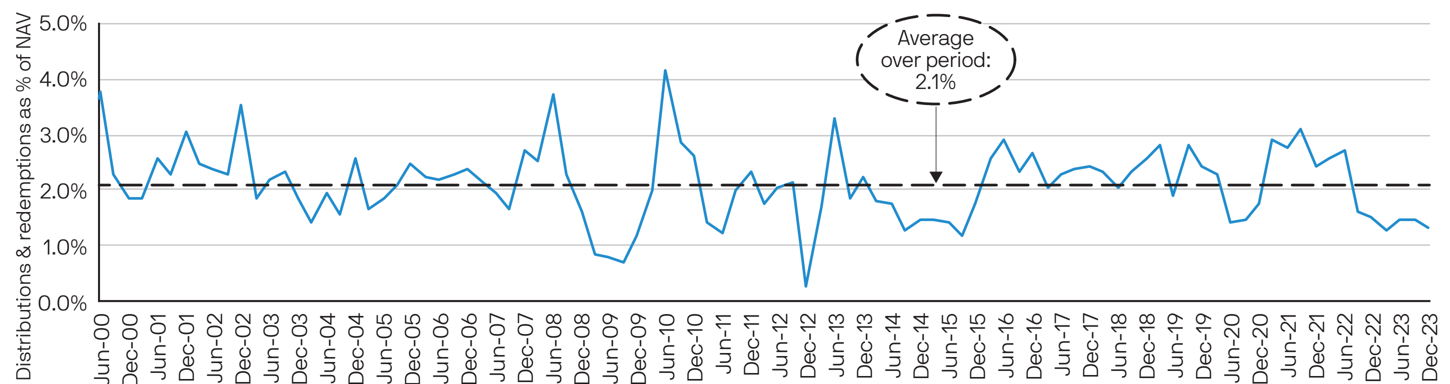
Assessing the values of individual properties in real time is a challenge for both public and private real estate investors. Because REIT shares trade in liquid markets, their prices can incorporate any available economic and property information in real time. In contrast, private core real estate funds are valued using the appraisal method. While appraisals include a wealth of property-level details, in the absence of an actual transaction they are perceived to be slow to incorporate market information.

One common valuation metric that can be applied across various investment categories is the capitalization rate (cap rate).[5] **Exhibit 7** compares the capitalization rates across public and private real estate. Appraisal-based cap rates, used in private strategies, are smoothed, while public REIT implied cap rates and private market transaction-based cap rates are far more volatile, as their prices tend to change more rapidly than private real estate appraisal prices. During periods of market stress, transaction-based cap rates in private funds may be skewed due to significantly reduced transaction volumes and the quality of the assets that can be sold.

[5] A cap rate is the unleveraged, current annual net income return of a property.

Steady flow or intermittent trickle: Liquidity in private real estate can vary widely

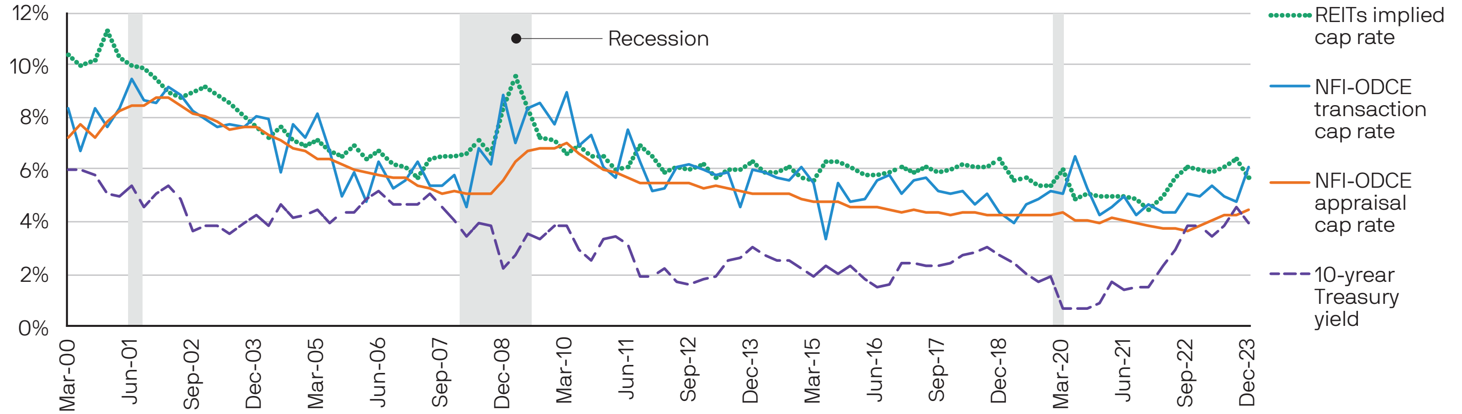
EXHIBIT 6: LIQUIDITY IN PRIVATE CORE REAL ESTATE FUNDS



Source: NFI-ODCE; data as of December 2023. Based on quarterly data from 2Q 2000–4Q 2023.

Publicly traded REIT prices and implied cap rates are far more volatile than private market appraisals

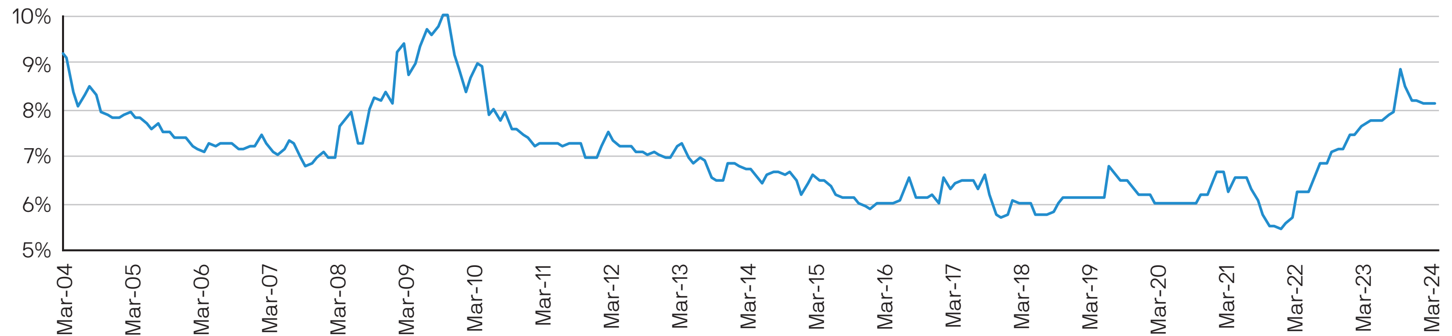
EXHIBIT 7: PUBLIC AND PRIVATE REAL ESTATE CAP RATES



Source: FRED, NCREIF, NAREIT T-Tracker, NBER; data as of December 2023. Based on quarterly data from 1Q 2000–4Q 2023.

Institutional market pricing of private core real estate indicates strong growth potential

EXHIBIT 8: UNDERWRITTEN INTERNAL RATE OF RETURNS (IRRS) IN PRIVATE CORE REAL ESTATE



Source: Based on proprietary data from J.P. Morgan Asset Management. The IRRs are the underwritten returns for investments in core real estate in each period over a hold period of 10 years and include both the income return and appreciation.

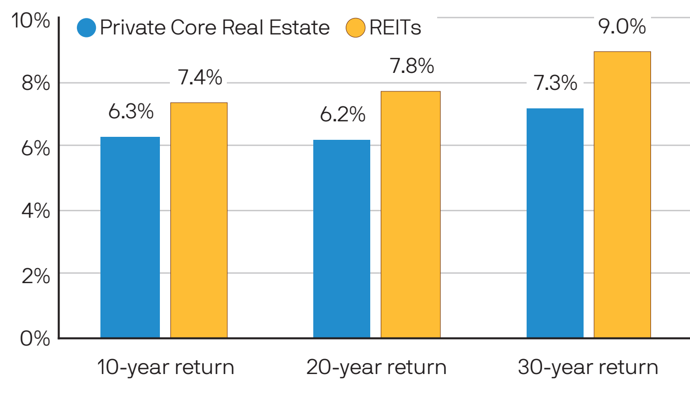
As illustrated in **Exhibit 7**, the spread between real estate cap rates and long-term Treasury yields has significantly narrowed as the Federal Reserve (Fed) has embarked on one of the fastest tightening cycles in decades. While the income premium of core real estate relative to Treasuries has declined, it is important to view real estate in the context of total return potential — both income and capital appreciation. When considering the total return outlook for the asset class, long-term returns look compelling in this environment, especially against the backdrop of high inflation. The expected total return underwritten in current deals, as shown in **Exhibit 8**, represents some of the highest levels since the GFC, as values of real estate properties have declined due to capital market pressures.

Performance

Perhaps this is surprising to some, but REIT index performance has exceeded that of private core real estate across time (**Exhibit 9**), contrary to the expectation of a private market "illiquidity premium." However, the performance difference is less surprising when the underlying investment composition is considered.

Historically, publicly traded REITs have outperformed private funds

EXHIBIT 9: HISTORICAL PERFORMANCE COMPARISON OF PUBLIC AND PRIVATE CORE REAL ESTATE



Source: NCREIF, NAREIT, J.P. Morgan Asset Management; data as of December 2023. Based on net of fees returns from 1Q 1978–4Q 2023. Analysis assumes 49 basis points of annual fees for REITs based on industry standards.

REIT index performance appears to have benefited over time from higher weightings to extended sectors, higher leverage and a lower cost for this leverage. Over a long-term horizon, these factors have contributed to higher returns for REITs than private core real estate funds. Of course, REIT investors also experience significantly greater price volatility, which may diminish the value of these excess returns in the eyes of investors.

REITs' performance may differ from private markets' by a wide margin during periods of market inflections. A better comparison can be measured over a full peak-to-peak market cycle. **Exhibit 10**, an analysis of historical performance over peak-to-peak cycles, shows that REITs still outperformed private core real estate, albeit by a smaller margin.

REITs' outperformance over private funds narrows over a consistent market cycle

EXHIBIT 10: HISTORICAL PERFORMANCE COMPARISON OF PUBLIC AND PRIVATE CORE REAL ESTATE OVER PEAK TO PEAK CYCLE

Cycle analysis	Period	Private core real estate	REITs
Private peak-to-peak cycle	Q3 2008–Q3 2022	**5.5%**	6.5%
REITs peak-to-peak cycle	Q2 2007–Q4 2021	5.6%	**6.8%**

Source: NCREIF, NAREIT, J.P. Morgan Asset Management, as of December 2023. Based on net of fees quarterly returns data. Analysis assumes 49 basis points annual fees for REITs based on industry standards..

As we've noted, one of the main advantages of REIT investing is the inclusion of higher returning extended sectors. The analysis in **Exhibit 11** compares the performance of the full REIT index with that of a hypothetical REIT subindex invested exclusively in core sectors. Extended sectors delivered a positive return contribution in all periods except the post-pandemic years, when the rally in retail REITs and industrial REITs led core sectors to outperform. Comparing the "core REIT" performance to the private core performance in Exhibit 9 indicates that the long-term advantage is smaller but still positive.

Extended sectors have driven a meaningful degree of REIT outperformance

EXHIBIT 11: CONTRIBUTION OF EXTENDED SECTORS TO REIT PERFORMANCE*

Trailing returns	NAREIT All Equity Index (%)	NAREIT Core Index (%)	Extended sectors (%)
3 years	5.2	6.5	-1.3
5 years	7.1	6.1	0.9
10 years	7.4	6.7	0.7
Since 2006	5.7	4.5	1.2

Source: Bloomberg, NAREIT, J.P. Morgan Asset Management; data as of December 2023. Percentages may not add up due to rounding effect. The extended sectors include data centers, health care, self-storage, diversified, telecommunications and gaming.

*The analysis creates a re-weighted REITs index assuming the index was invested only in the core sectors and compares the performance of this re-weighted core index to the actual REITs index. Performance of extended sectors is the delta between the two indices.

Part two

Optimizing real estate allocations

Having explored the differences between public and private real estate, we now turn to the question of how investors can structure portfolios that capture the benefits of each. Our analysis finds that an allocation including both REITs and private funds may deliver better outcomes. We consider this topic from a number of perspectives:

- The optimal mix of private and public real estate in a portfolio
- The benefits of global real estate, whether public or private
- The signal in the lead/lag relationship between REITs and private funds
- The signal in REIT pricing vs. net asset value

Identifying an optimal blend of public and private real estate

Asset allocators need to use the appropriate data in blending public and private real estate. To analyze private real estate risk, quarterly appraisal-based data represents smoothed returns and may thus be an inappropriate measure of risk. Calendar year data may better capture economic volatility,[1] given that the data includes at least one appraisal per year on each of the assets in the underlying portfolios.[2]

As we highlighted earlier, private core real estate and REITs have different sector compositions. Even when controlling for the four traditional core sectors, we find that REITs still have higher volatility.[3]

[1] Source: Michael Giliberto, Ph.D., "Assessing real estate volatility," 2003.

[2] Source: Joseph Gyourko, "Real estate returns in the public and private markets: A reexamination following the rise of equity REITs," 2004.

[3] In this analysis, we have not corrected for differences in leverage given that this is not within the control of the average investor.

REITs volatility is similar to equities; private core real estate volatility sits between equities and fixed income

EXHIBIT 12: COMPARING RISK METRICS ACROSS REAL ESTATE

	Private core real estate (%)	REITs (%)	Private core real estate – Traditional core sectors (%)	REITs (ODCE core sectors reweighted) (%)
	NFI-ODCE	NAREIT All-Equity	NFI-ODCE	NAREIT All-Equity
HISTORICAL 15 YEARS (2009–2023)				
Max calendar year drawdown	-12	-25	-22	-30
QUARTERLY DATA				
Volatility	7	21	9	23
2x standard deviation	-9	-29	-10	-35
3x standard deviation	-16	-50	-18	-58
ANNUAL DATA				
Volatility	13	17	16	19
2x Standard Deviation	-19	-22	-24	-28
3x Standard Deviation	-32	-39	-40	-48
FORWARD LOOKING (10–15 YEARS)				
Volatility	11	16	N/A	N/A
2x standard deviation	-13	-23	N/A	N/A
3x standard deviation	-24	-39	N/A	N/A

Source: NCREIF, NAREIT, J.P. Morgan Asset Management; data as of December 31, 2023. The time period for historical data is to capture a trough-to-trough cycle for private core real estate. Volatility and standard deviation are used interchangeably. 2x standard deviation denotes the downside return outcome 2 standard deviations away from the mean. “Private core real estate (traditional core sectors)” re-weights the ODCE index using the historical weights of traditional core sectors only. “REITs (ODCE core sectors re-weighted)” uses the historical weights of ODCE core sectors and applies that to the REITs index. Forward-looking data is based on J.P. Morgan’s 2024 Long-Term Capital Market Assumptions in USD. The LTCMAs use desmoothed returns for private core real estate to more accurately reflect the market volatility. For reference, the forward-looking expected volatility for U.S. equities is 16% and that of U.S. Aggregate bonds is 4.3%. Maximum calendar year drawdown for private core real estate, 2023; for REITs, 2022.

An approach that adjusts for appraisal smoothing[4] may better present the true risk of private core real estate. For example, the 2023 drawdown in private core real estate can best be explained as 2 standard deviations from the mean. Although the full GFC is not captured in the 2009–23 period shown in **Exhibit 12**, the maximum calendar year drawdown in private core real estate over this 15-year period was close to 3 standard deviations from the mean.

Assessing the data, we find that private real estate volatility is somewhere between equity and fixed income volatility, whereas the volatility of REITs is in line with that of equities. Using a forward-looking approach that adjusts for appraisal smoothing, which is the approach used in J.P. Morgan Asset Management’s *Long-Term Capital Market Assumptions* (LTCMAs), may be more appropriate in constructing multi-asset portfolios that include private real estate.

As a starting point, **Exhibit 13** uses data from the 2024 LTCMAs to demonstrate forward-looking return and risk assumptions across a wide range of private–public real estate blends.

[4] J.P. Morgan Asset Management, “LTCMA volatility and correlation methodology,” 2019.

Blending public and private real estate allows for more effective allocations

EXHIBIT 13: KEY FORWARD-LOOKING LONG-TERM RISK AND RETURN METRICS FOR BLENDED REAL ESTATE PORTFOLIOS

U.S. private core RE → U.S. REITs

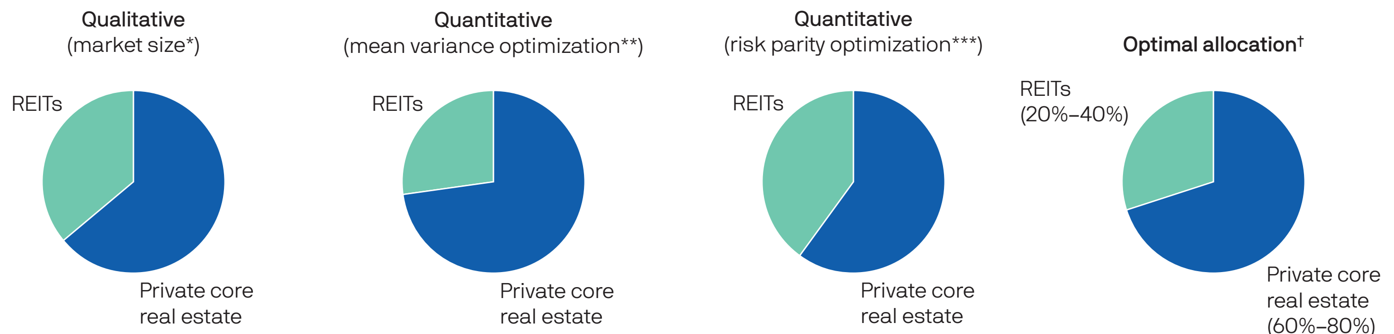
Forward-looking metrics	100/0	90/10	80/20	70/30	60/40	50/50	40/60	30/70	20/80	10/90	0/100	60/40
Compound return (%)	7.5	7.6	7.8	7.9	8.0	8.1	8.1	8.2	8.2	8.2	8.2	6.8
Volatility (%)	10.6	10.5	10.5	10.7	11.1	11.7	12.4	13.2	14.1	15.0	16.0	10.4
Sharpe	0.48	0.50	0.51	0.51	0.51	0.50	0.48	0.46	0.44	0.42	0.40	0.42
Downside risk (%)	-9.4	-9.1	-9.0	-9.2	-9.8	-10.5	-11.5	-12.7	-14.0	-15.5	-17.0	-9.9
Global equity beta	0.23	0.28	0.32	0.37	0.42	0.47	0.52	0.57	0.62	0.67	0.72	0.62

Relative liquidity: Lower → Higher

Source: J.P. Morgan Asset Management. Based on 2024 Long-Term Capital Market Assumptions in USD, net of fees, and denotes the performance of a median manager over a 10- to 15-year horizon. The 60/40 portfolio is based on global equities and global bonds.

Multiple models consider how to identify the optimal mix of public and private real estate

EXHIBIT 14: ALLOCATION MIX BETWEEN PUBLIC AND PRIVATE REAL ESTATE



Source: MSCI, J.P. Morgan Asset Management; based on data availability as of December 2023. For illustrative purposes only.

*Market size is based on the size of the professionally managed global real estate investment market. "REITs" is representative of the public real estate universe owned by REITs and REOCs listed on public exchanges. **Mean variance optimization framework allocates the portfolio weights based on the mix that generates the highest Sharpe ratio. ***Risk parity optimization allocates the portfolio weights based on the mix that ensures that the marginal contribution to total risk is equal for all asset classes. †Optimal allocation is based on the average of the qualitative and quantitative frameworks.

REITs have historically offered higher returns, but also greater price volatility, more downside risk and higher equity beta. The spectrum of portfolios shown above suggests that a "sweet spot" exists in a blend that is tilted toward private real estate, with approximately 20%–40% allocated to REITs. This conclusion is reinforced by additional analysis incorporating both qualitative and quantitative frameworks.

In short, we believe REITs should serve as a complement to private real estate, not as a substitute for it.

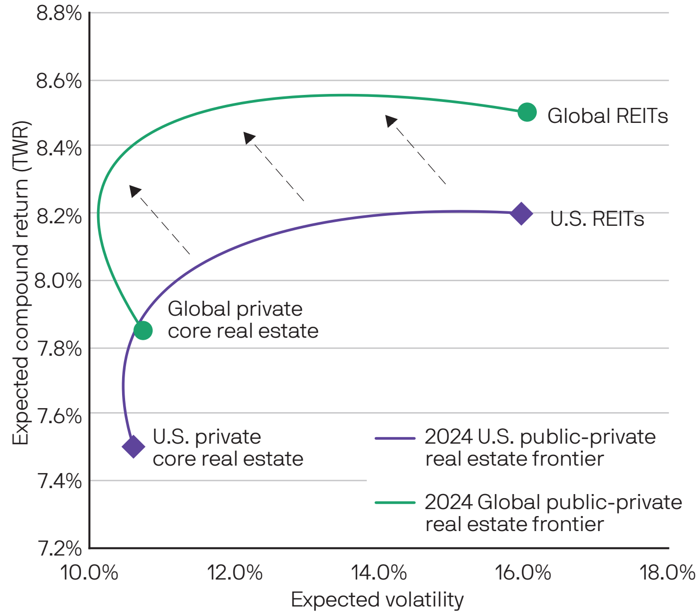
Exhibit 14 presents three additional frameworks for distributing capital across REITs and private real estate:

- Allocating based on market size
- Allocating based on forward-looking return, risk and correlation to achieve the highest Sharpe ratio (mean variance optimization)
- Allocating according to a risk parity model that ensures equal marginal contribution to total risk (risk parity optimization)

Each model produces a modestly different result, and averaging across all three may lead to a more resilient allocation.

Adding global exposure may enhance real estate portfolio efficiency

EXHIBIT 15: RETURN AND VOLATILITY FOR PUBLIC AND PRIVATE REAL ESTATE



Source: J.P. Morgan Asset Management. Based on 2024 Long-Term Capital Market Assumptions in USD, net of fees, and denotes the performance of a median manager over a 10- to 15-year horizon. The 60/40 portfolio is based on global equities and global bonds. Returns incorporate the translation of international real estate to USD, which may be accretive to performance. Results may vary depending on the investor's home currency.

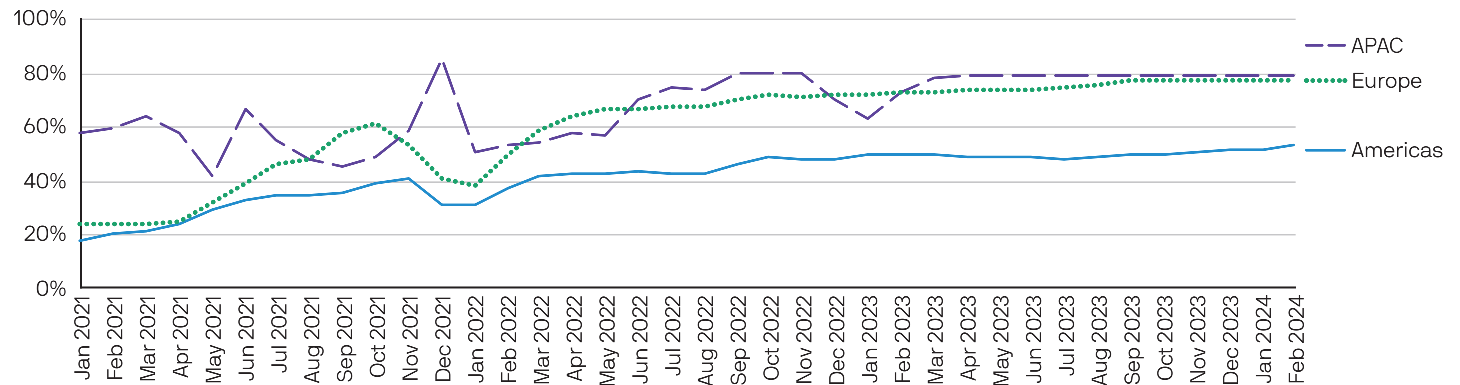
Moving beyond the U.S. market

Whether in public or private vehicles, real estate is a global asset class. **Exhibit 15** demonstrates that a global portfolio offers improved returns for each blend of public and private vehicle. Allocating globally captures specific regional drivers, such as monetary and fiscal policies, cultural preferences and demographics.

Because real estate is a local asset class, sector dynamics and trends will vary globally. **Exhibit 16** highlights differences in office sector fundamentals that become apparent when viewed through a global lens. For instance, office assets in the Asia-Pacific (APAC) region have fared much better than their U.S. counterparts, as a higher percentage of APAC employees have returned to the office compared with the U.S. market.

Going global provides exposure to varying office dynamics across regions

EXHIBIT 16: DIVERGENCE IN OFFICE OCCUPANCY ACROSS DIFFERENT REGIONS

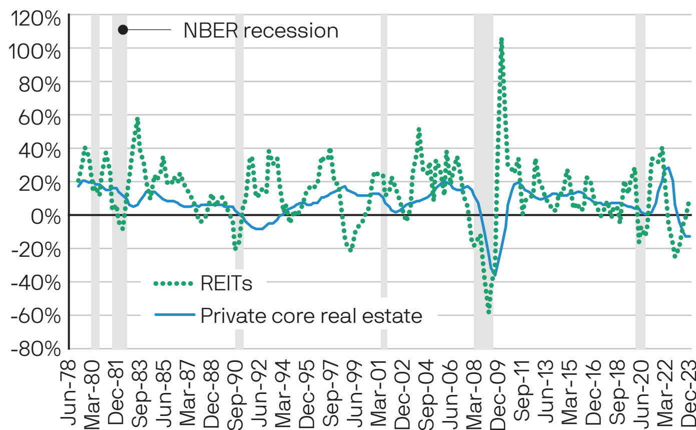


Source: Jones Lang LaSalle, J.P. Morgan Asset Management; data as of February 2024.

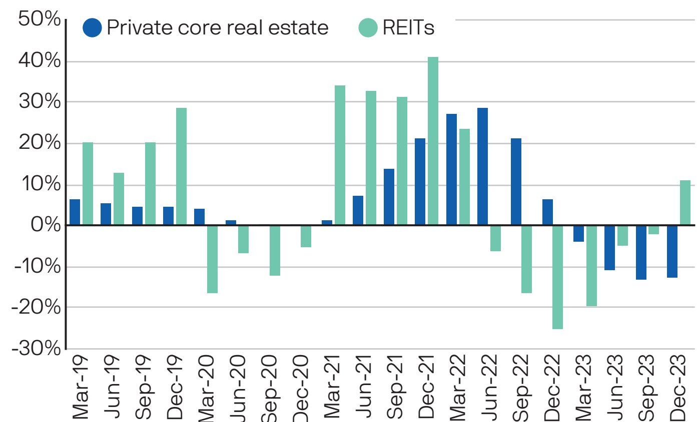
Can sharp movement in REITs' performance during market inflection points signal attractive opportunities to tilt portfolio allocations?

EXHIBIT 17: PERFORMANCE DIVERGENCE DURING PERIODS OF MARKET DISLOCATIONS

17A: PUBLIC VS. PRIVATE REAL ESTATE TOTAL RETURNS (%, ROLLING 4-QUARTER TOTAL RETURNS)



17B: EXAMPLE OF LEAD/LAG RELATIONSHIP (%, ROLLING 4-QUARTER TOTAL RETURNS)



Source: NCREIF, NAREIT, J.P. Morgan Asset Management; data as of December 31, 2023.

Active allocation to real estate

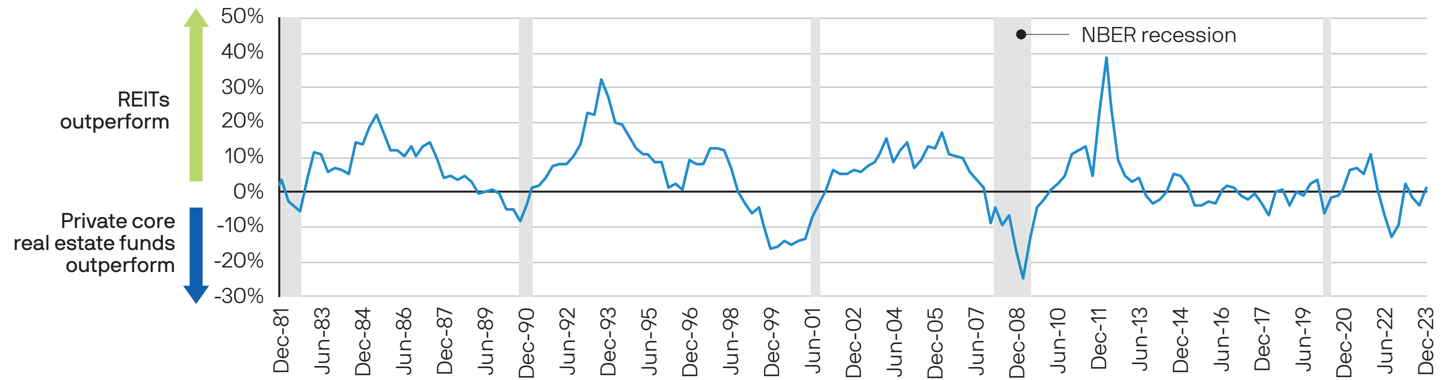
The higher market volatility of REITs is often seen as a negative when compared with the slow price adjustments of private core real estate. However, there may be substantial information contained in these price swings that more tactically minded investors can capture. Asset allocators with diversified real estate portfolios should pay attention to sharp movement in REIT prices as a potential signal for the broader private real estate market (**Exhibit 17**).

Cyclical timing considerations

While the lead/lag relationship in returns between REITs and private core real estate during market inflection points has played out in recent years, this trend does not hold true in every instance. Asset allocators should observe closely the broader backdrop of macroeconomic factors, bottom-up valuation fundamentals, market liquidity, capital market conditions and real estate's supply-demand dynamics to inform their active allocation decisions.

Persistence of return dispersions across public and private real estate open a window of opportunity

EXHIBIT 18: RETURN OUTPERFORMANCE BETWEEN PRIVATE CORE REAL ESTATE AND REITS
(%, ROLLING 3-YEAR TOTAL RETURNS)



Source: NCREIF, NAREIT, J.P. Morgan Asset Management; data as of December 31, 2023.

When the lead/lag dynamic does play out during periods of market inflections, it may provide tactical investors with an opportunity to add incremental returns amid an elevated dispersion in valuations between REITs and private core real estate.

Exhibit 18 charts the relative performance between private core real estate and REITs since the inception of the indices in 1978. A persistence of return dispersions across public and private real estate may last for a long time, creating windows of opportunities in which skilled managers can capture relative value.

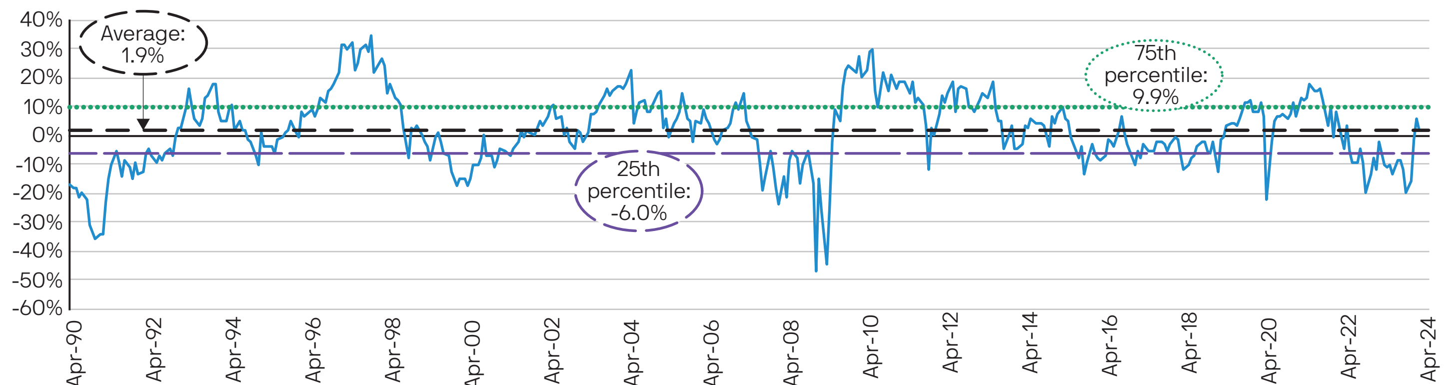
Valuation and sector dispersion

REIT pricing may provide another signal: the differential between the share price of a REIT and its net asset value (NAV). Historically, REITs have traded at a slight premium to their private NAVs, but this relationship can deviate significantly over time. In periods of market dislocation, REITs have traded at substantial discounts to their private NAVs as a result of faster repricing. During periods of early market recovery, REITs tend to price in growing optimism sooner and may thus trade at significant premiums to their private NAVs.

Exhibit 19 charts REITs' price-to-NAV relationship over time. In periods of market stress, investors penalized REITs excessively, leading the shares to trade at

Wide swings in the premium and discount to NAV may allow investors to reposition their allocations

EXHIBIT 19: HISTORICAL PREMIUM AND DISCOUNT OF REITS' PRICE TO NAV



Source: Green Street, J.P. Morgan Asset Management; data as of April 2024. Premium/discount to NAV is for U.S.-listed REIT companies.

significant discounts to their private NAVs. The trade reversed rapidly during the early market recovery. Understanding this historical pattern, investors may, on the margins, reposition their allocations to benefit from this trend.

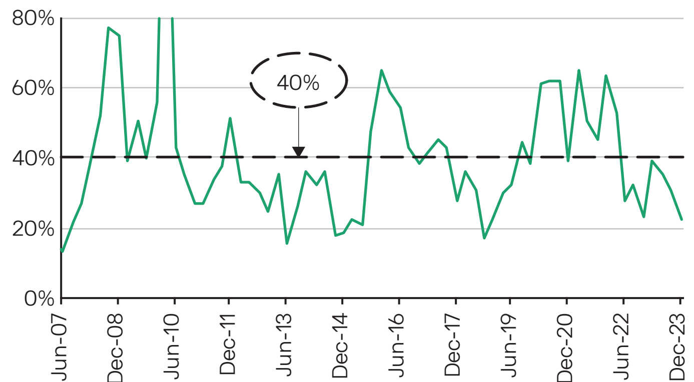
Finally, including a structural REIT allocation in portfolios offers an additional dimension of tactical flexibility: targeting REITs focused on specific geographies and/or specific property types. Significant sector return dispersion provides opportunities for active sector selection (**Exhibit 20**). However, this optionality is not available to investors in private core real estate, as funds are typically diversified and adjust sector exposure slowly at the property level. Investors who are uncomfortable making such decisions can engage experienced REIT managers to undertake this research-intensive activity.

Capital allocation tilts can be implemented through various sources — new commitments, reallocation of income distributions or active redemptions — depending on an investor's objectives and constraints. An active real estate strategy, which can shift allocation to capture periodic valuation anomalies in REITs and private core real estate, may improve portfolio outcomes relative to a static allocation.

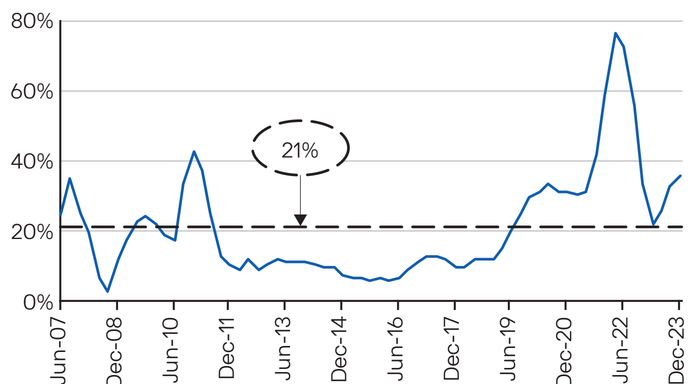
More sectors and higher volatility: Sector dispersion is higher in REIT markets

EXHIBIT 20: ANNUAL SECTOR RETURN DISPERSION IN REITs AND PRIVATE CORE REAL ESTATE

20A: REITs SECTOR DISPERSION
(%, ROLLING 4-QUARTER TOTAL RETURNS



20B: PRIVATE CORE REAL ESTATE SECTOR DISPERSION
(%, ROLLING 4-QUARTER TOTAL RETURNS



Source: NCREIF, NAREIT, J.P. Morgan Asset Management. Based on gross sector return; data as of December 31, 2023. REITs' return dispersion is based on sector returns for industrial, retail, residential, office, lodging, health care and self-storage. Private core real estate return dispersion is based on sector returns for industrial, retail, apartments and office.

Key conclusions

The development of innovative investment structures has enhanced the long-term growth potential of real estate as an investible asset class. Exposure to new and differentiated property types that support expanding economies has bolstered the asset class and the investment outcomes it can deliver. We believe investors may benefit from an approach that takes advantage of the full spectrum of real estate, including the tactical flexibility provided by more liquid investment vehicles.

The two broad categories of real estate investments — publicly traded REITs and private real estate funds — feature underlying assets that are often similar, especially for core properties. However, as investments, they exhibit different short-term performance characteristics. Structural differences such as sector composition, leverage, liquidity and pricing mechanics create opportunities for thoughtful allocators. Ultimately, a portfolio that takes advantage of both public and private real estate may offer a better level of performance and diversification.

The higher price volatility of REITs across cycles, and particularly during periods of market dislocation, may also provide a signal to guide investment decision-making. In the early stages of a downturn, REITs may signal the potential for broader price declines; in the early stages of an upturn, REITs often recover in advance of private funds. This lead/lag pattern may serve as both a signal to capital allocators and a means of return diversification across cycles.

The key investment benefits of real estate — stable income, attractive long-term real returns, resilience to inflation and portfolio diversification — will remain valuable now and in the future. Enhancing those benefits via a diversified public and private market strategy may improve the risk and return trade-offs for investors.

Our Mission

The Strategic Investment Advisory Group (SIAG) approaches today's investment challenges with a global view across asset classes. Through an unrivaled collaboration that unites our deep expertise and research within each investment sector, we offer the power of perspective to help our most sophisticated clients achieve their long-term investment goals and build stronger portfolios.

Executive Sponsor

George Gatch
CEO
J.P. Morgan Asset Management

Strategic Investment Advisory Group Chair

Michael Cembalest
Chairman of Market and Investment Strategy for J.P. Morgan Asset & Wealth Management
J.P. Morgan Asset Management

Co-Chairs

Jared Gross
Head of Institutional Portfolio Strategy

David Lebovitz
Global Strategist, Multi-Asset Solution

Pulkit Sharma, CFA, CAIA
Head of Alternatives Investment Strategy & Solutions

Contributors

Godwin Marfo Ahenkorah, CFA
Research Analyst, Alternatives Investment Strategy & Solutions

Robert W. Culver
Head of Client Strategy, Security Capital Research & Management

Luigi Cerreta, CFA
Interim Head of Research, Real Estate Americas

Tony Manno Jr.
Portfolio Manager, Security Capital Research & Management

Kathleen Clum
Research Analyst, Institutional Portfolio Strategy

Kevin Bedell
Research Analyst, Security Capital Research & Management

Aysha Patel
Investment Specialist, Security Capital Research & Management

Sean Kane
Research Analyst, Real Estate Americas

Brian Nottage, PhD, CFA
Portfolio Manager, Real Estate Americas

Richard Wang, CFA, CAIA
Research Analyst, Alternatives Investment Strategy & Solutions

Jason DeSena, CFA
Portfolio Manager, Alternatives Investment Strategy & Solutions

For more information visit:
www.jpmorgan.com

The views contained herein are not to be taken as advice or a recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of production. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit and accounting implications and determine, together with their own financial professional, if any investment mentioned herein is believed to be appropriate to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yields are not reliable indicators of current and future results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide.

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our privacy policies at https://am.jpmorgan.com/global/privacy.

This communication is issued by the following entities: In the United States, by J.P. Morgan Investment Management Inc. or J.P. Morgan Alternative Asset Management, Inc., both regulated by the Securities and Exchange Commission; in Latin America, for intended recipients' use only, by local J.P. Morgan entities, as the case may be.; in Canada, for institutional clients' use only, by JPMorgan Asset Management (Canada) Inc., which is a registered Portfolio Manager and Exempt Market Dealer in all Canadian provinces and territories except the Yukon and is also registered as an Investment Fund Manager in British Columbia, Ontario, Quebec and Newfoundland and Labrador. In the United Kingdom, by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority; in other European jurisdictions, by JPMorgan Asset Management (Europe) S.à r.l. In Asia Pacific ("APAC"), by the following issuing entities and in the respective jurisdictions in which they are primarily regulated: JPMorgan Asset Management (Asia Pacific) Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited, each of which is regulated by the Securities and Futures Commission of Hong Kong; JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601586K), which this advertisement or publication has not been reviewed by the Monetary Authority of Singapore; JPMorgan Asset Management (Taiwan) Limited; JPMorgan Asset Management (Japan) Limited, which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association, Type II Financial Instruments Firms Association and the Japan Securities Dealers Association and is regulated by the Financial Services Agency (registration number "Kanto Local Finance Bureau (Financial Instruments Firm) No. 330"); in Australia, to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Commonwealth), by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919). For all other markets in APAC, to intended recipients only.

For U.S. only: If you are a person with a disability and need additional support in viewing the material, please call us at 1-800-343-1113 for assistance.

© 2024 JPMorgan Chase & Co. All rights reserved.

CAMP-0424-AM-2760078-SIAG-WP | 09q3241505195923

J.P.Morgan
ASSET MANAGEMENT