REAL ESTATE FORECASTS

Russell Investments

LONG-TERM CAPITAL MARKETS ASSUMPTIONS
PUBLIC AND PRIVATE REAL ESTATE

RUSSELL INVESTMENTS RESEARCH

Real estate forecasts: Long-term capital markets assumptions public and private real estate

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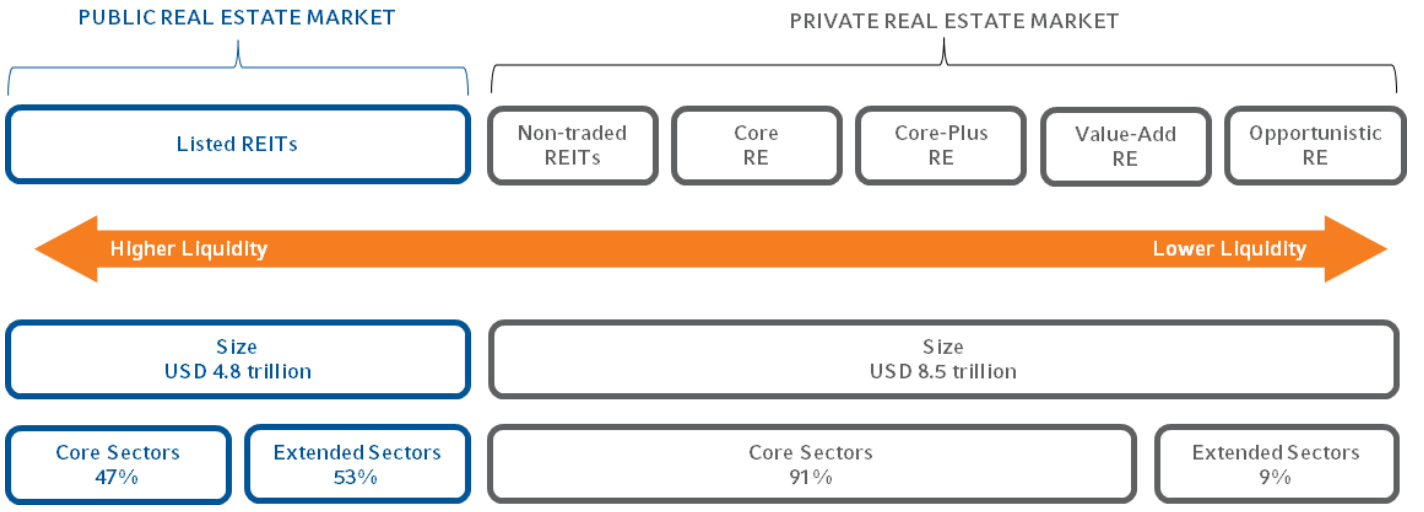
Overview of Real Estate

The scope of real estate has broadened over time, with traditional core sectors such as office, retail, residential, and industrial now being complemented by emerging sectors such as student housing, single-family rental, self-storage, healthcare (medical office and senior housing), data centers, and telecommunications. Over the past decade, the global real estate market under professional management has doubled, reaching USD 13.3 trillion.[1] Investors aiming to access this expanding market typically choose between two primary investment vehicles: publicly traded (listed) real estate investment trusts (REITs) and private (non-listed) real estate funds. Although both involve similar underlying assets, they differ notably in sector exposure, risk and return objectives, price volatility, leverage, and liquidity (Exhibit 1).

Exhibit 1: Global Real Estate Market

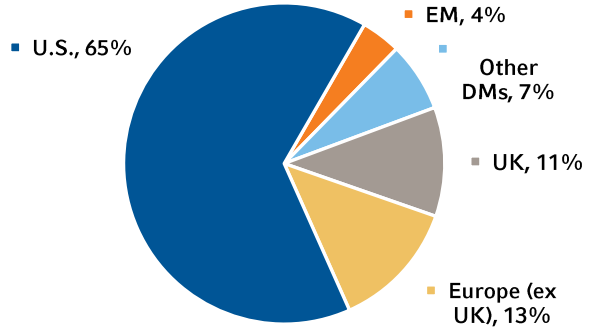


Source: MSCI, NCREIF, NAREIT, J.P. Morgan Asset Management (Dec 2023), For illustrative purposes only.

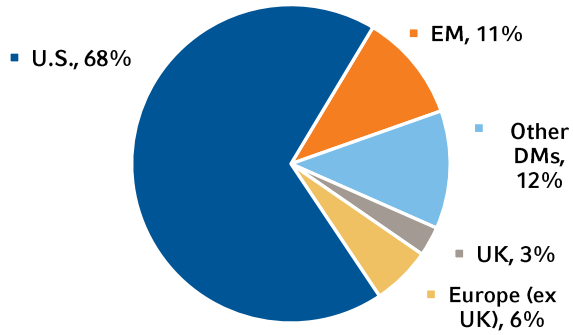
Regionally, private (non-listed) real estate, like public (listed) REITs, is heavily concentrated in the U.S., with 65% of private real estate deal value since 2000 occurring there (Exhibit 2).

Exhibit 2: Public and Private Real Estate Funds by global region[2]

Private Real Estate by Global Region (share of deal value since 2000)



Listed REITs by Global Region (share of market cap)



Source: Prequin, Worldscope, Datastream, Goldman Sachs Investment Research (Oct 2023)

Long-term Return Drivers

Our real estate forecasting framework starts by estimating the return on core unlevered private real estate using a sum-of-parts approach. While both public (listed) REITs and core private (non-listed) real estate investment vehicles fundamentally invest in private real estate assets, sector and valuation differences between the two can significantly impact return outcomes. These variations in sector composition and valuations between listed REITs and private real estate are accounted for in our framework and contribute to the differences in return expectations. Additionally, both core private real estate and public (listed) REITs employ leverage. Our forecasting framework factors in the impact of leverage on the returns for both.

Our framework implies that, over the very long term, return differences between public (listed) REITs and core private real estate are primarily driven by differences in leverage and sector composition. However, over shorter, cyclical periods, other factors—such as differing starting nominal cap rates, sector composition and P/NAV valuation differences—can lead to divergent return outcomes. The current[3] estimates for the different return drivers are shown in Exhibit 3.

Exhibit 3: Real Estate Return Drivers in Equilibrium[4]

RETURN SOURCE	UNLEVERED CORE PRIVATE RE	LEVERED CORE PRIVATE RE [5]	PUBLIC (LISTED) REITS[6]
Starting Nominal Cap Rate	6.0%	6.0%	6.0%
- Maintenance Capex	-1.2%	-1.2%	-1.2%
+ Net operating Income (NOI) Growth	2.5%	2.5%	2.5%
- Change in Cap Rate	0.0%	0.0%	0.0%
+ P/NAV Valuation Impact			0.0%
+ Impact of Sectoral Differences vs Private Core RE			0.6%
+ Impact of Leverage		0.6%	0.9%
- Investment Management Fees	-0.8%	-0.8%	
- REITS G&A Expenses			-0.8%
= Total Return (Net)	**= 6.5%**	**= 7.1%**	**= 8.0%**

Brief Definitions of Return Drivers

1. **Starting Nominal Cap Rate**

   The Nominal Cap Rate is determined by dividing a property's Net Operating Income[7](NOI) by its market value (private) or market cap (REITs).

2. **Maintenance Capex**

   NOI often overstates the actual cash flow available to investors because it excludes ongoing maintenance capital expenditures, which are essential to preserve the property's operational capacity and value (Illmanen et al., 2019). Maintenance Capex captures these expenses, typically expressed as a percentage of the property's value.

3. **Net Operating Income (NOI) Growth**

   Net Operating Income (NOI) Growth refers to the change in the net operating income generated from a property.

4. **Change in Cap Rate**

   Impact of the difference between the starting nominal cap rate and the nominal cap rate at the end of the forecasting period.

5. **P/NAV Valuation Impact**

   Captures the impact of REITs' prices reverting to underlying property NAVs. The P/NAV (Price-to-Net Asset Value) ratio for REITs compares a REIT's stock price to the net asset value of its underlying assets.

6. **Impact of Sectoral Differences vs Private Core RE**

   Captures the forecasted return difference between REITs and private core RE arising from sectoral differences between the two.

7. **Impact of Leverage**

   Captures the impact of leverage differences on forecasted returns.

8. **Investment Management Fees**

   Investment Management[8] fees are the management and performance-based fees charged by the fund manager in private real estate funds, typically covering fund administration, asset management, and performance incentives.

9. **REITs G&A Expenses**

   General and Administrative (G&A) expenses in REITs are corporate-level costs, including executive salaries, office rent, legal fees, and other administrative overhead. Unlike property-level operating expenses included in maintenance capex and tied to property upkeep, G&A expenses are recorded on the REIT's income statement. These expenses directly affect the REIT's financial performance, and the returns investors receive.

> *[Implied cap rates] provide a measure of a property's income potential, reflecting investor expectations and market sentiment.*

Details of Return Drivers

1. Starting Nominal Cap Rate

The Nominal Cap Rate is determined by dividing a property's Net Operating Income (NOI) by its market value[9]. Cap rates vary depending on the data source: private real estate cap rates are typically either transaction-based or appraisal-based. Appraisal-based cap rates rely on property valuations using historical data and comparable sales, making them more stable but slower to reflect current market conditions. Transaction-based cap rates, on the other hand, are derived from recent property sales, providing real-time insights, though they tend to be more volatile.

Implied cap rates, commonly used in REITs, are calculated by dividing NOI by the REIT's market capitalization. They provide a measure of a property's income potential, reflecting investor expectations and market sentiment. Historically, transaction-based and REIT cap rates align quickly, while discrepancies between appraisal-based and transaction-based cap rates can persist.

For our equilibrium assumptions, we consider all three cap rates—i.e., transaction-based and appraisal-based cap rates for private core real estate and implied cap rates for core REITs—to be equal to their long-term average of 6%.

It is possible that at a particular point in time, private real estate transaction-based cap rates and REIT implied cap rates may be different, which can lead to different return forecasts over shorter horizons.

2. Maintenance Capex

Maintenance capital expenditures refer to the capital invested in maintaining or repairing a property to preserve its operational capacity and value. Unlike capital expenditures aimed at enhancing or increasing a property's value, maintenance capex focuses solely on sustaining existing conditions. From 1978 to 2016, maintenance capex has averaged approximately 33% of the net operating income of the NPI-OCDE index (Pagilari 2017) and has varied significantly by sector. Professional forecasters estimate the maintenance capex to be lower—around 15%[10]. In our long-term assumptions, we assume that maintenance capex is 20% of the cap rate.

3. Net Operating Income (NOI) Growth

Net Operating Income (NOI) Growth refers to the change in the NOI over time. NOI growth is influenced by various macroeconomic factors—primarily GDP growth and inflation—apart from being influenced by region, property, and sector-specific factors. Theoretically, during periods of stable economic growth, property owners should be able to pass through inflation-related cost increases to tenants, thereby maintaining or increasing NOI. However, during economic downturns, rising unemployment and higher bankruptcy rates can lead to reduced occupancy and a decline in NOI. Our empirical analysis supports these theoretical linkages, leading us to estimate a long-run real NOI growth rate of 0.25%.

4. Change in Cap Rates

Cap rates can fluctuate significantly over time, influenced by factors such as interest rates, market sentiment, and property-specific conditions. An increase in cap rates typically indicates declining property values, while a decrease suggests property value appreciation. In equilibrium, we assume that the effect of cap rate changes on real estate returns is zero. In other words, we assume the cap rate is at its equilibrium level and remains unchanged.

We also find cap rates and BBB yields to be closely linked and the difference between the two to be mean-reverting.Furthermore, the two series also exhibit statistically significant co-integration, indicating that while each may independently show trends or volatility, their values are linked in the long term. Over cyclical horizons, sharp moves in nominal yields can impact cap rates and lead to capital gains or losses from a change in cap rates.

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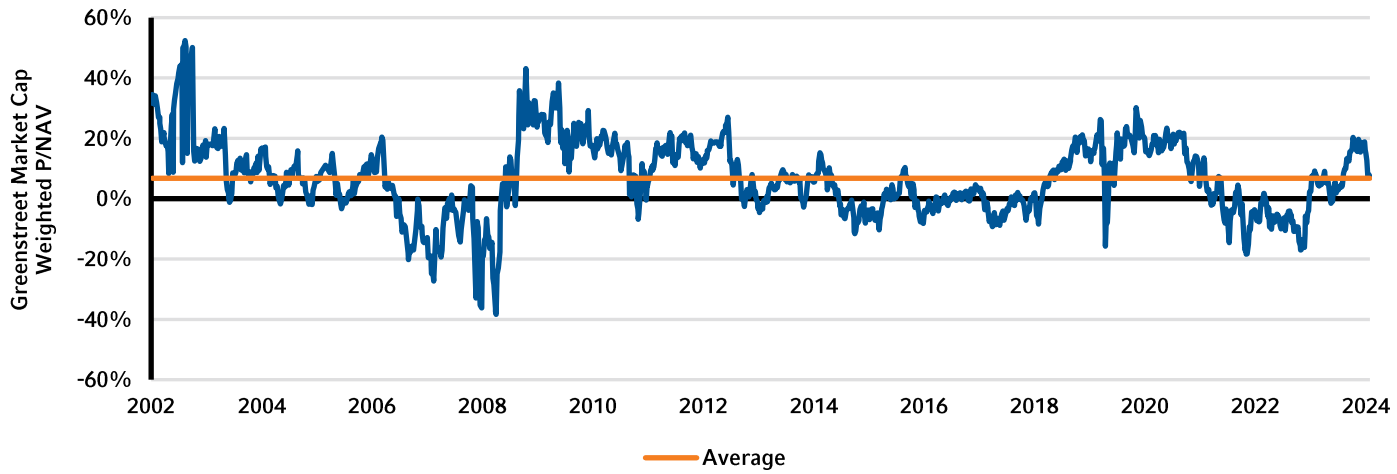
5. P/NAV Valuation Impact

The P/NAV (Price-to-Net Asset Value) ratio for REITs compares the market price of a REIT's stock to the net asset value of the underlying assets it holds. It is usually expressed as a price premium to NAV (i.e., P/NAV-1), indicating whether the REIT is trading at a premium or discount relative to the property portfolio it holds. This valuation mismatch has historically been mean-reverting (Exhibit 4). REIT managers, uniquely positioned between the public equity and private real estate markets, can exploit differences in valuations, causing the gap to shrink when it becomes significant[11]. Over the long-term equilibrium horizon, we assume that the impact of P/NAV on REIT returns is neutral, and that the P/NAV ratio returns to its historical average level.

Exhibit 4: Historical Premium to NAV (P/NAV-1)[12]



Source: Greenstreet; Data as of December 6, 2002 to January 2, 2025

6. Impact of Sectoral Differences vs Private Core RE

REITs and core private real estate funds can have different sector exposures. The cap rates, maintenance capex, NOI growth and other assumptions can vary significantly by sector. 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.[13] In contrast, the public real estate universe faces no such constraints and includes a much wider range of real estate property types.

The sector impact over shorter, cyclical horizons can be significant and can lead to meaningful return differences between REITs and private core real estate funds. In Exhibit 5, the returns of the NAREIT All Equity Index are compared with a hypothetical "core" index. The "core" index re-weights the constituents of the NAREIT All Equity index, assuming that the index was only invested in the core sectors and companies. The difference between the performance of this "core" index and the NAREIT All Equity index provides us with an estimate of the excess returns from the extended sectors exposures in the NAREIT All Equity Index. This difference is noted in Exhibit 5 as the excess return from extended sectors over different lookback periods. As an example, since 2005, the extended sectors within the REITs index have generated approximately 1.2% excess return compared to the core sectors (Exhibit 5).

> *REITs and core private real estate funds can have different sector exposures.*

Exhibit 5: Historical return differences between Core and Extended Sector REITs in the U.S.

HISTORICAL PERIOD	NAREIT ALL EQUITY INDEX (%)	"CORE" INDEX (%)	EXCESS RETURN FROM 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: JP Morgan Asset Management, NAREIT, Bloomberg; Data as of December 2023

Over the long term, as public REITs and private real estate compete for the same investment dollars, sectoral differences are expected to diminish. For example, NCREIF's 2024 update to include extended sectors reflects this alignment. Over the long term, we estimate the impact of sector differences on REITs' performance versus private core real estate funds to decline to around 60 basis points.

7. Impact of Leverage

We use LTV (Loan-to-Value ratio) as a measure of leverage in our real estate forecast. LTV represents the proportion of debt relative to the total value of the asset. We assume that over the long term, the LTV ratio will be 35% for public REITs and 25% for private core real estate. In real estate investment, debt is a common feature across ownership structures, but the way public and private investment vehicles utilize leverage can vary significantly. Historically, leverage employed by REITs, as measured by loan-to-asset value (LTV), has been higher than that of private core real estate funds. Over time, the leverage gap between REITs and private real estate has narrowed, driven by declining REIT leverage. [14]

Since 2008, the leverage gap between REITs and private real estate has narrowed, driven by both declining REIT leverage and rising private real estate debt.

We calculate the levered return for public REITs and levered core private real estate by assuming these long-term values and a cost of debt estimated from BBB yields.

8. Investment Management Fees

Investment management fees refer to the management costs charged by external managers of private real estate funds, including open-ended funds, separate accounts, or limited partnerships. Historically, external approaches to gaining exposure to private real estate have been significantly more expensive than internal approaches, such as in-house management, co-investments, or operating subsidiaries. Internal methods typically incur costs of approximately 35 basis points, whereas external approaches have averaged about 175 basis points (Carlo et al. (2021). For our modeling assumptions we estimate long-term investment management fees at 80 basis points.

9. REITs' G&A Expenses

General and Administrative (G&A) expenses encompass the broader costs associated with owning and managing a portfolio of commercial real estate assets, excluding direct property-level operating expenses. Unlike operating expenses, which are already accounted for in the Net Operating Income (NOI) calculation, G&A expenses include corporate overhead costs, such as executive salaries, office expenses, and other administrative functions. For the median REIT in 2017, G&A expenses represented 89 basis points of total book assets (Exhibit 6), as reported in financial filings with the SEC. These costs need to be considered separately in return forecasting to avoid underestimating overall expenses.

For our modeling assumptions, we align REITs' G&A Expenses with this estimate from NAREIT and forecast them to be at 80 basis points.

Exhibit 6: REITs' G&A Expenses/Total Book Assets

	MEDIAN G&A / TOTAL BOOK ASSETS
All REITs	0.89%
REITs with Total Assets > $5 billion	0.72%
REITs with Total Assets $1 billion - $5 billion	0.93%
REITs with Total Assets < $1 billion	1.17%

Source: NAREIT

Volatility Estimates

While the volatility of public REITs and private real estate reported returns is directly observable, private real estate valuations are often influenced by appraisal-based methods, mark-to-model valuations of illiquid assets, nonsynchronous trading effects, and potential seasonality caused by index aggregation. These factors contribute to smoothing effects and serial correlation in the observed returns of private core real estate. To uncover the true economic risk and underlying volatility, it is necessary to apply de-smoothing techniques to adjust these returns.

We employ econometric models[15] to recover the true underlying (de-smoothed) returns from the smoothed private real estate returns. This framework allows us to estimate the de-smoothed returns and better align the economic factors driving both private real estate and REIT performance.

Our current[16] volatility estimates are noted below:

> *This framework allows us to estimate the de-smoothed returns and better align the economic factors driving both private real estate and REIT performance.*

Exhibit 7: Estimated17 Annualized Volatility for REITs and Levered Core Private RE

	LEVERED CORE PRIVATE RE (SMOOTHED)	PUBLIC (LISTED) REITS	LEVERED CORE PRIVATE RE (UNSMOOTHED)
Annualized Volatility	6.5%	20.0%	17.2%

Source: Russell Investments

These volatility estimates lead the unsmoothed risk-adjusted returns on private core real estate and REITs to be very similar over a long-term equilibrium horizon.

[1] Strategic Investment Advisory Group. "The role of public and private strategies in real estate." *J.P. Morgan Asset Management*. Available at: https://am.jpmorgan.com/content/dam/jpm-am-aem/global/en/institutional/insights/portfolio-insights/siag-wp-real-estate.pdf
[2] "Other DM" includes Japan and Australia.
[3] We periodically review these estimates to assess the impact of any structural long-term changes in the asset class or the investment vehicles. Please reach out to your Russell Investment representative for the latest long-term capital market assumptions.
[4] The estimates are based on indices that are US focused, which is one of the largest markets for real estate investments. The same framework can be applied to forecast real estate returns in other regions, however certain estimates might vary.
[5] Levered Core Private RE forecast is based on the NFI-ODCE Index.
[6] Public (Listed) REITs forecast is based on the FTSE NAREIT All-Equity REITS Index
[7] The rental income generated by a property is often assessed using its Net Operating Income (NOI). It is a key metric for evaluating the profitability and cash flow potential of real estate assets.
[8] In the context of private real estate investments, a fund manager typically manages the fund or property portfolio and makes key decisions regarding acquisitions, dispositions, financing, and overall strategy. The fund managers earn a share of the profits in the form of investment management Fees, due to their active role in managing the investment.
[9] While both Net Operating Income (NOI) and dividend yield provide insights into returns, they differ in scope and purpose. NOI is an asset-level measure, focusing solely on the income generated by the property itself. In contrast, dividend yield is an equity-level metric, calculated as the annual dividends paid to shareholders divided by the current stock price. It reflects the portion of a REIT's distributable income that is returned to investors. Dividend yield is influenced not only by the NOI from the properties owned by the REIT but also by additional factors, such as corporate-level expenses (e.g., G&A), leverage etc. We account for G&A and leverage costs as separate line-items in our forecasts.
[10] For example, Greenstreet, JP Morgan etc.
[11] NAV Premiums & REIT Property Transactions. Available at: https://www.reit.com/sites/default/files/NAV%20Premiums%20and%20REIT%20Property%20Transactions.pdf
[12] GS Average (Market Cap Weighted) NAV Premiums for the United States.
[13] NCREIF Fund Index – Open End Diversified Core Equity (NFI-ODCE). *National Council of Real Estate Investment Fiduciaries (NCREIF)*. Available at: https://user.ncreif.org/data-products/funds/
[14] Pierzak, E. (2024, May 28). "Less Stress and Greater Flexibility: REITs Benefit From Low Leverage and Interest Expense Ratios". *Nareit*. Available at: https://www.reit.com/news/blog/market-commentary/less-stress-and-greater-flexibility-reits-benefit-low-leverage-and
[15] For example: Getmansky, Lo and Markov (2004) and Geltner (1993).
[16] We periodically review these estimates to assess the impact of any structural long-term changes in the asset class or the investment vehicles. Please reach out to your Russell Investment representative for the latest long-term capital market assumptions.
[17] These estimates are based on quarterly returns data from the NFI-ODCE Index and the FTSE NAREIT All Equity REITs Index from 1994-2024.

References

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First used: February 2025

AI-30506-02-28