Why Real Estate?

(updated to Q4 2024)

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Table of Contents

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Why Real Estate?

- One of the most common questions faced by investors, investment managers, and consultants.
  - As the premier association representing the institutional real estate community, PREA is also often asked this question.

- Institutional investor portfolios have an average **9.0% allocation** to real estate. (Source: PREA 2025 Investment Intentions Survey)

- **What are the benefits to having an allocation to commercial real estate within an overall portfolio and why should investors consider such an allocation?**

- The following presents a brief outline of standard arguments in favor of a real estate allocation along with illustrative **numbers updated on an ongoing basis**, and with links to more detailed resources available to members on the PREA website.

What is Real Estate?
An Overview of the Asset Class

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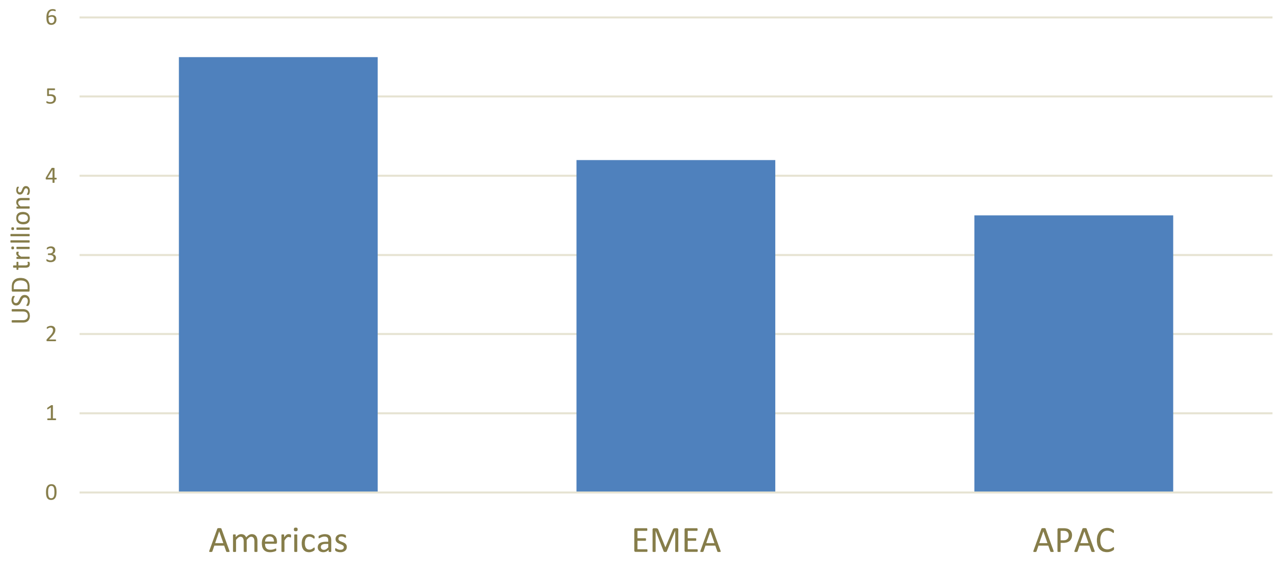
Global Market

- Important to define exactly what one means by “real estate” as an investment.
- Real estate provides **global investment opportunities**.

Size of Global Real Market by Region (USD trillions)



Based on gross asset value of professionally managed portfolios.
Source: MSCI Real Estate Market Size 2023, MSCI Real Assets, July 2024

Global Market

- An important consideration when investing capital in real estate outside of your home country is the **transparency** of the market.
  - Clear and reliable data on financial, legal, and physical factors important to the asset and transacting

Most Transparent Real Estate Markets
- United Kingdom
- United States
- France
- Australia
- Canada
- Netherlands
- Ireland
- Sweden
- Germany
- New Zealand
- Belgium
- Japan

Transparent Real Estate Markets
Examples:
- Finland
- Singapore
- Switzerland
- South Korea
- UAE – Dubai
- China(Shanghai /Beijing)

Semi-transparent Markets
Examples:
- Israel
- India
- Indonesia
- Mexico
- UAE – Abu Dhabi
- Argentina

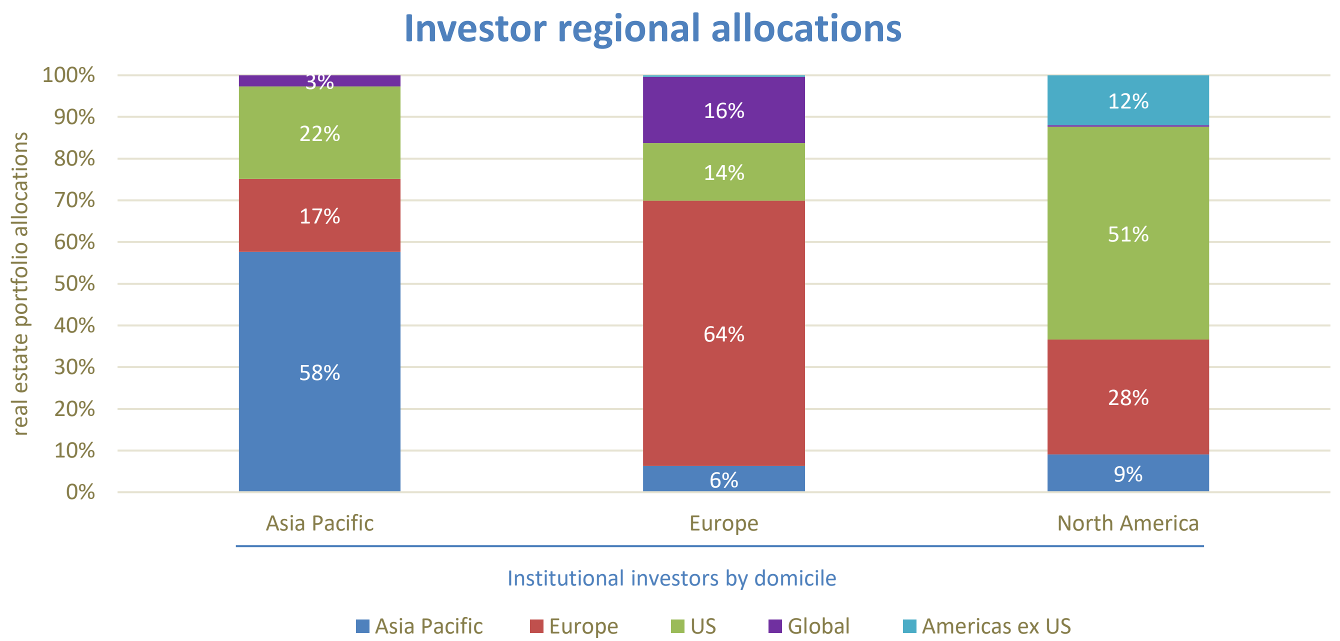
Low Transparency Markets
Examples:
- Colombia
- Pakistan
- Kuwait
- Cayman Islands
- Nigeria

Opaque Markets
Examples:
- Oman
- Tunisia
- Honduras
- Panama
- Iraq

Source of transparency ratings: Global Real Estate Transparency Index 2022, JLL & LaSalle Investment Management

Global Market

- Most institutional real estate investors continue to have a home bias in their portfolio



Note: Global refers to investments in which less than 90% of GAV is held in one region.
Source: [PREA 2025 Investment Intentions Survey]

- While a global asset class, **the remainder of this report will concentrate on the U.S. real estate market.**

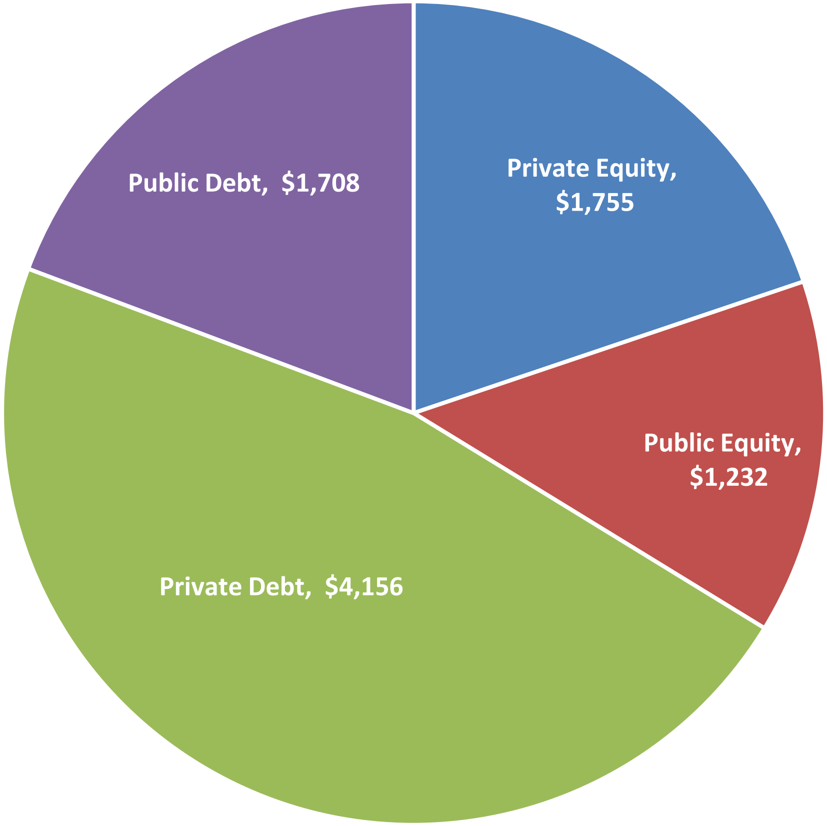
Four Quadrants

- There are different forms which investment in real estate can take, each with different characteristics
- Overall real estate market often described as being composed of **Four Quadrants**:

Private Equity	**Public Equity (e.g. REITs)**
Private Debt	**Public Debt (e.g. CMBS)**

Size of the Institutional U.S. Real Estate Market

($billions)



Values are estimated based on combining several sources. Date of each source varies from 2023 to 3Q2024 with most numbers being as of 3Q2024. These are estimates only, based on available data; final estimates are sensitive to assumptions made. Private equity is on a net asset value basis and based on professionally managed properties held for investment purposes (e.g. does not include owner occupied); only includes portfolios with total value greater than $100 million (e.g. does not include small investors). Public equity equals market value of equity REITs. Public Debt includes CMBS, equity value of mortgage REITs, and bonds issued by mortgage and equity REITs. Private Debt includes all multi-family and commercial mortgages except those in CMBS, held by mortgage REITs, or held by GSEs (i.e. not pooled) or by federal, state, or local governments.

Sources: PREA, MSCI, NCREIF, NAREIT, Federal Reserve Flow of Funds

Updated: January 2025

Resources for Real Estate Debt

- **Each quadrant can have its own role within a portfolio.**
- Here, however, we do not discuss real estate debt.

PREA resources on real estate debt:

- "Private Real Estate Credit: Navigating Opportunities in a Shifting Landscape", PREA Quarterly, Fall 2024
- "Closing the Gap: Real Estate Debt Opportunities for US Pension Fund Investors", PREA Quarterly, Spring 2023
- "The Capital Stack: How Do Different Parts Stack Up as Investments?", *PREA Quarterly*, Spring 2022
- "Real Estate Debt Funds: A Short Primer", *PREA Quarterly*, Summer 2016
- "The Building Blocks of Real Estate Debt: What Investors Should Know About This Growing Option", *PREA Quarterly*, Fall 2018
- "Reexamining the Real Estate Quadrants", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2021.

Public versus Private

- Public-market and private-market equity real estate are highly related but not perfect substitutes for one another.
  - Each has its own distinct advantages and disadvantages.

- For a comparison of the risk-return of REITs and private real estate, see: "Private Equity Real Estate Fund Performance: A Comparison to REITs and Open-End Core Funds", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2021.

Public versus Private

- Three differences between public market real estate (i.e., REITs) and private equity real estate that are commonly discussed are:

  1. **Volatility**
  2. **Liquidity**
  3. **Fee structures**

Volatility:

- At least in the short run, REITs are more influenced by overall equity markets and are more volatile than private market real estate.
- Private and public real estate are far more highly correlated over long horizons, so the short run volatility of REITs may be of less concern for investors with truly long-term investment horizons.

Public versus Private

Liquidity

- Trading on public equity markets, REITs are far more liquid than private market real estate.
  - An advantage of public markets for investors who may have need for liquidity, have shorter investment horizons, or wish to deploy capital quickly

- However, liquidity is a short-run concept by its nature (i.e., the ability to monetize an investment quickly). Taking advantage of liquidity in the public markets will expose the investor to any excess volatility in the public market at the time.

Public versus Private

Fee structures

- Fees paid by investors have much different structures in public and private real estate.
- Private real estate typically involves percentage annual management fees and often incentive fees based on performance paid to investment managers.
- For an overview of fee structures and average levels in private equity real estate funds, see the 2024 PREA Management Fees & Terms Study.
- For REITs, transaction costs faced by investors in REITs include the bid-ask spread plus any price impact of trading, direct trading costs, and any fees paid to managers of REIT funds.
- However, a comparison of fee levels must also include costs at the REIT level such as general and administrative expenses which deduct from the ultimate returns provided by the real estate.
  - For a comparison of total costs of REITs and private market real estate, see "REITS Versus Private Equity Real Estate: Three Topics of Debate", *PREA Quarterly*, Spring 2014

Public versus Private

- Publicly traded and private market real estate both have advantages and disadvantages.
  - Some investors see advantages in using both in a real estate portfolio.
  - *PREA Research Report*: "REITs and Real Estate: Is There Room for Both in a Portfolio?", October 2010
  - However, some investors include REITs within the real estate allocation, but others include them within the equities allocation

- **Hereafter In this report, unless otherwise stated, we discuss only private market equity investments in real estate.**

What is Private Equity Real Estate?

- **Private equity real estate**: ownership interest in commercial properties.
- Spread across sectors such as office, industrial, retail, and apartment, as well as other more specialized sectors such as data centers, self-storage, seniors housing, student housing, manufactured housing, etc.
- Asset class typically accessed by institutions via direct ownership (sometimes in joint venture with others) or via private equity real estate funds (either closed- or open-ended).
- For some types of assets, the distinction between real estate and infrastructure can be fuzzy (e.g., logistics, data centers, ports)
  - Some investors combine real estate and infrastructure under one allocation (e.g., real assets or private markets) and others keep separate allocations to each.

What is Private Equity Real Estate?

- Private market investment that allows opportunity to attempt to increase value through control of the asset.
  - Distinct from public market investments which are typically held passively.

- Cashflows based on leases, with opportunity for changes in property value.
  - Leases are a debt-like obligation of the lessee.
  - As leases roll-over and market rents change, property income changes. Further, owners can work to improve the property to increase lease rates and occupancy – increases cashflow and property value.
  - **Combines aspects of both debt and equity** (but unique and not replicable using those asset classes).

What is Private Equity Real Estate?

- As a private market investment, real estate is **relatively illiquid**.
  - Greater costs and time involved in real estate transactions compared to stocks or bonds
  - Must be factored into investment decision making; the need for liquidity varies across investors.
  - Many investors believe that real estate should, on average, earn an "illiquidity premium" – i.e. extra return to compensate for its lack of liquidity.
    - This can be an attraction to the asset class, especially for investors who do not require liquidity in their real estate investments.
    - However, there is little empirical evidence on the size of this return premium, or even whether it does actually exist.

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Investment Vehicles

A variety of different vehicles exist for institutional investors to access commercial real estate investments:

Open-end funds	
Fund holds an existing portfolio of properties, investors enter or exit the fund at NAV. Investors can submit orders to enter or exit each quarter.	
Advantages • Liquidity (relative to other private real estate options) • Access to a professionally managed and diversified portfolio • Relatively low fees • Can see portfolio before investing	Disadvantages • Limited control • Liquidity may not be available when most desired (entry queues in up markets and exit queues in down markets)

This is not meant to be a complete description of these real estate investment vehicles; only a very brief general overview is provided. Because of variation across specific investments the descriptions may not be accurate in all cases and do not apply to all structures. Those wishing full details should consult their legal advisor or investment consultant.

Investment Vehicles

Closed-end funds

Fund with limited life. Investors commit capital, capital is called and invested during investment period, assets are liquidated and capital returned by end of fund life (often an option to extend life for limited period). Typically follow value-add or opportunistic strategies.

Advantages	Disadvantages
• Access to managerial expertise in specific areas • Investor can choose funds following specific strategy • Wide array of specialized strategies available • Managers usually have flexibility to pursue opportunities (downside: investors have little control)	• Higher fees generally, including carried interest • Limited control • Lack of liquidity, capital locked up for life of fund • Usually blind pool • J-curve effect • Fixed life may not coincide with real estate cycle

This is not meant to be a complete description of these real estate investment vehicles; only a very brief general overview is provided. Because of variation across specific investments the descriptions may not be accurate in all cases and do not apply to all structures. Those wishing full details should consult their legal advisor or investment consultant.

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Investment Vehicles

Separate account

Investor contracts with manager to invest capital on their behalf. Capital is not pooled with other investors.

Advantages	Disadvantages
• Access to expert managers • Control and flexibility , can set parameters and varying levels of manager discretion • Limited liquidity (same as property)	• Need substantial capital to obtain a diversified portfolio

Direct investment

Investor has direct ownership of properties; invests themselves. May also involve joint ventures with partners for some properties.

Advantages	Disadvantages
• Greatest control • Overall costs lower (for large investors)	• Need in-house expertise • Need substantial capital to obtain a diversified portfolio

This is not meant to be a complete description of these real estate investment vehicles; only a very brief general overview is provided. Because of variation across specific investments the descriptions may not be accurate in all cases and do not apply to all structures. Those wishing full details should consult their legal advisor or investment consultant.

Investment Vehicles

Fund of funds

Fund which pools capital of investors and invests in real estate funds.

Advantages	Disadvantages
• Expert manager creates portfolio of funds	• double layer of fees

Co-investment

Existing investor in a fund also invests alongside fund in a specific asset.

Advantages	Disadvantages
• Control, ability to select individual investments • Lower overall fees compared to funds alone	• Need in-house expertise to evaluate opportunities • Large ticket investments – need significant size

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Investment Vehicles

REITs	
Publicly traded real estate securities. Exempt from corporate tax on distributed earnings.	
<u>Advantages</u> • Liquidity (shares trade on stock exchange) • Transparency (publicly traded company reports) • Diversified portfolio easy to create for any amount of capital • REITs (or similar) available in various countries, easy to diversify internationally • Access to non-traditional property types	<u>Disadvantages</u> • Short term volatility • Values may depart significantly from underlying real estate in short run • Correlated with equity market in short run, may reduce diversification potential

This is not meant to be a complete description of these real estate investment vehicles; only a very brief general overview is provided. Because of variation across specific investments the descriptions may not be accurate in all cases and do not apply to all structures. Those wishing full details should consult their legal advisor or investment consultant.

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Strategies

- There are many possible investment strategies within real estate
- Often broken into three basic categories based on risk/return profile: **core, value-add, opportunistic.**
- No universally accepted definitions of these classes, but typical industry view:

Core
lower risk, lower expected return, most return from income, typically low leverage

Value-add
medium risk, medium expected return, return from income and capital gains, typically medium level of leverage

Opportunistic
higher risk, higher expected return, return mostly from capital gains, typically higher leverage

Strategies

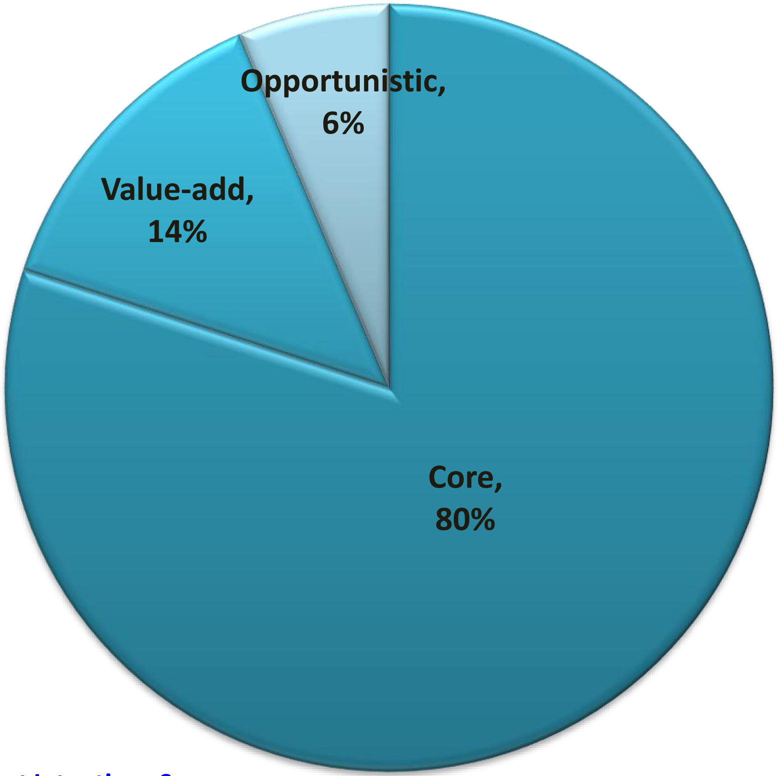
Research comparing performance and looking at differences in investment characteristics across core, value-add, and opportunistic strategies:

- "Another Look at Private Real Estate Returns by Strategy", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2019.

- "Do Core and Opportunistic Funds Have Different Risk Factor Exposures?", *PREA Quarterly*, Winter 2019

Allocations Within Real Estate

- Institutional allocations within real estate (globally):



Source: [PREA 2025 Investment Intentions Survey]

- **The discussion that follows concentrates on the lower risk categories of real estate that form the basis for most institutional portfolios.**

Most Common Arguments for a Real Estate Allocation

Most Common Arguments

- Five characteristics of commercial real estate commonly cited as benefits of the asset class:

1. **Good returns with relatively low volatility**
2. **Income generation**
3. **Diversification**
4. **Inflation hedge**
5. **Important component of the investable universe**

PREA Resources

PREA Resources (click links to access on PREA website):

- For actual and target real estate allocations of institutional investors, as well as breakdowns of the average real estate portfolio by geography, strategy, and sector, see the PREA Investment Intentions Survey

- For a look at how pension funds globally invest in real estate, including how much, the approaches used, and the relative costs of the different approaches, see: “Three Decades of Global Institutional Investment in Commercial Real Estate”, PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2021.

- For a discussion of the issues to consider, and the process involved, in creating a real estate allocation from across the various risk/return categories, see “Creating an Optimal Real Estate Asset Allocation”, *PREA Quarterly*, Winter 2015

PREA Resources

- A quantitative analysis of optimal real estate allocations (including public and private, direct and via funds) can be found in "Real Estate in Mixed-Asset Portfolios for Various Investment Horizons", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2019.

- A quantitative examination of the role of real estate in a portfolio post-financial crisis can be found in: "After the Fall: Real Estate in the Mixed-Asset Portfolio in the Aftermath of the Global Financial Crisis", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2013.

- For an analysis of the unique benefits of real estate within the broader alternative investments classification, see: "Will Private Equity and Hedge Funds Replace Real Estate in Mixed-Asset Portfolios?" , PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2007.

PREA Resources – Defined Contribution

- Defined contribution (DC) plans are becoming an increasingly important aspect of the institutional investing landscape.
- For a look at the scale of real estate investments in DC investment products, as well as annual capital flows, see The Defined Contribution Survey 2024
- For examinations of the role of real estate within a DC paradigm see:
  - "Assessing the Impact of Real Estate on Target Date Fund Performance", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2013.
  - "The Evolving Role of Real Estate in Defined Contribution Plans", *PREA Quarterly*, Fall 2014
  - "Defined Contribution Plans: Can Real Estate Help Individuals Save or, and Spend In, Retirement?", *PREA Quarterly*, Summer 2016
  - "The 4% Rule: Does Real Estate Make a Difference?", April 2017

Good Returns & Low Volatility

Annual returns, 1978 to 2024:

	S&P 500	Bloomberg US Aggregate Bond Index	NCREIF Property Index
Ave. return per year	13.98%	6.62%	8.79%
Volatility	16.54%	7.19%	7.70%
Sharpe measure*	0.54	0.25	0.46

Sources: PREA Research, NCREIF, LSEG Datastream

- The **NCREIF Property Index**** represents returns to a direct, unlevered investment in a diversified portfolio of U.S. commercial property.

* Sharpe calculated as average return above one year Treasury yield, divided by volatility. Gives average return per unit of risk; is commonly used to measure risk-adjusted performance.

** The recently introduced "expanded version" of the NPI is used here.

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Good Returns & Low Volatility

Compound average returns (annualized), to Q4 2024:

	S&P 500	Bloomberg US Aggregate Bond Index	NCREIF Property Index*	MSCI/PREA U.S. Property Fund Index
1 year	25.5%	1.3%	0.6%	-1.2%
3 years	9.0%	-2.4%	-0.6%	-1.7%
5 years	14.6%	-0.3%	3.3%	3.7%
10 years	13.1%	1.3%	5.8%	6.5%

* Expanded version
Sources: PREA Research, NCREIF, MSCI, LSEG Datastream

- The **MSCI/PREA U.S. Property Fund Index** measures returns, including leverage and other aspects of the fund structure, to open-end real estate funds and is therefore investable for institutional investors. Returns presented are gross of fees.

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Property Type Differences

- Different sectors within real estate may have different investment characteristics
- Most common property types are office, apartment, retail, and industrial (there are many other sub-sectors and more specialized sectors such as student housing, seniors housing, self storage, data centers, etc.)
- **Annual returns, 1990* to 2024:**

	Industrial	Office	Apartment	Retail
Ave. return/year	9.8%	5.7%	8.2%	7.3%
Volatility	10.0%	10.3%	8.0%	7.6%

Source: PREA Research, NCREIF

* 1990 is chosen as a starting point as the NCREIF database contains a relatively small number of properties from some sectors (especially apartment) in earlier years.

Property Type Differences

- There can be significant variation over time in the relative performance of different property types.
- The "quilt chart" below ranks the four main property types each of the last sixteen years by their total return that year. Each property type is color coded so that changes in rank over time can be seen easily.

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Best	Ret.	Apt.	Apt.	Ret.	Ret.	Ind.	Ret.	Ind.	Ind.	Ind.	Ind.	Ind.	Ind.	Ind.	Ret.	Ret.
	Apt.	Ret.	Ind.	Apt.	Ind.	Ret.	Ind.	Ret.	Off.	Off.	Off.	Off.	Apt.	Apt.	Ind.	Ind.
	Ind.	Off.	Off.	Ind.	Apt.	Off.	Off.	Apt.	Apt.	Apt.	Apt.	Apt.	Off.	Ret.	Apt.	Apt.
Worst	Off.	Ind.	Ret.	Off.	Off.	Apt.	Apt.	Off.	Ret.	Ret.	Ret.	Ret.	Ret.	Off.	Off.	Off.

Source: PREA Research based on NCREIF data

- Most property types have been the top performer and the worst performer in different years.

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Alternative Property Sectors

- What types of properties are considered "institutional" can and does change over time.
  - E.g., in the early 1980s, multifamily had an very low allocation in typical institutional real estate portfolios (see next slide) as apartment buildings were considered by many to not be "institutional investments". That has now entirely changed and multifamily is a major sector for institutional investment.

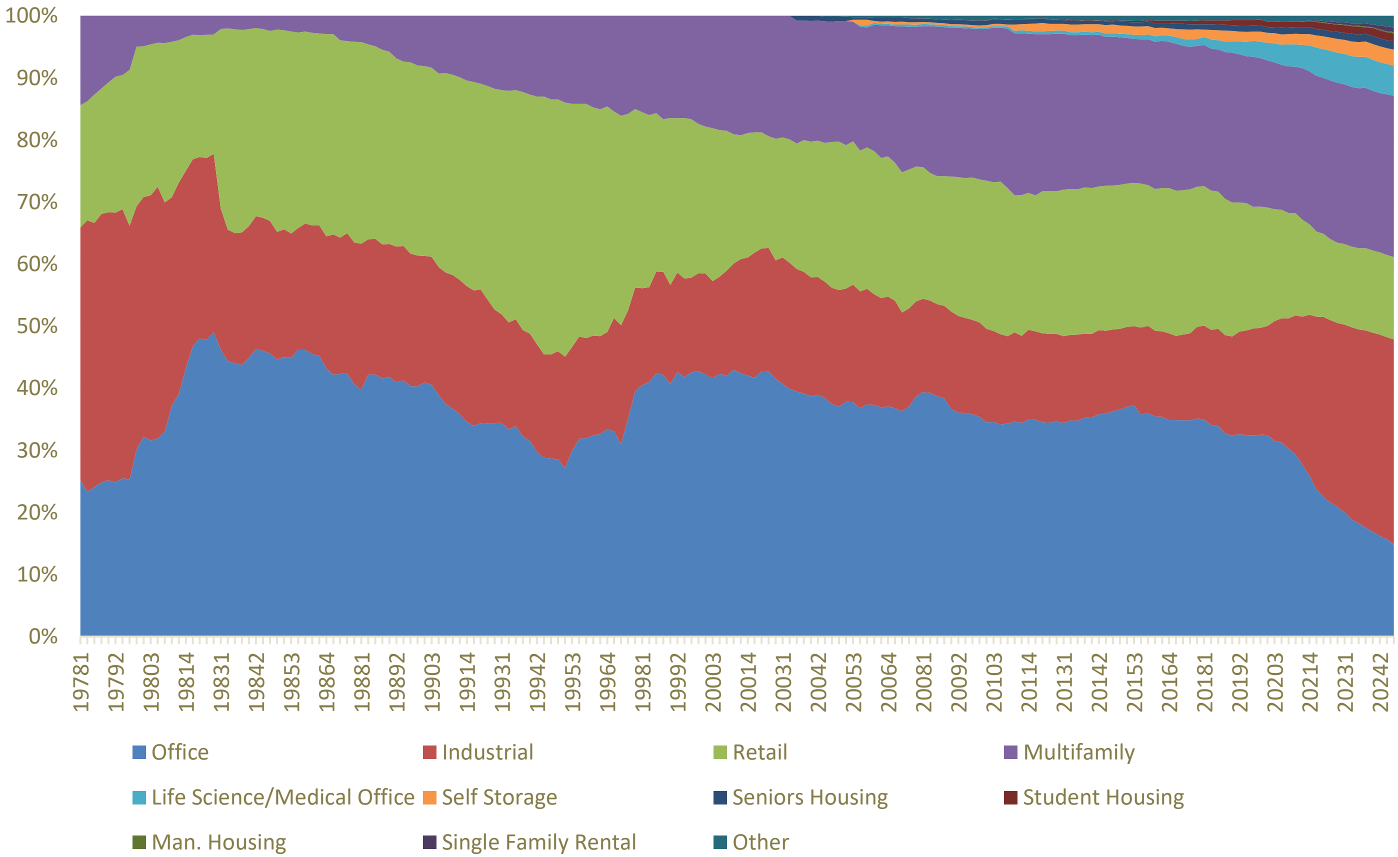
- There is growing investor interest in alternative sectors beyond the four traditional sectors of office, industrial, retail, and multifamily.

- Alternative sectors include property types such as: seniors housing, student housing, self storage, life sciences, data centers, manufactured homes, and others.

- To reflect the changing nature of the asset class, in 2024 NCREIF introduced the NPI-expanded which includes the alternative property types previously excluded from the NPI…

Alternative Property Sectors

Property Sector Allocation in the NPI-expanded



In recent years, alternative sectors have started to become a larger allocation in typical institutional portfolios.

Source: PREA, NCREIF

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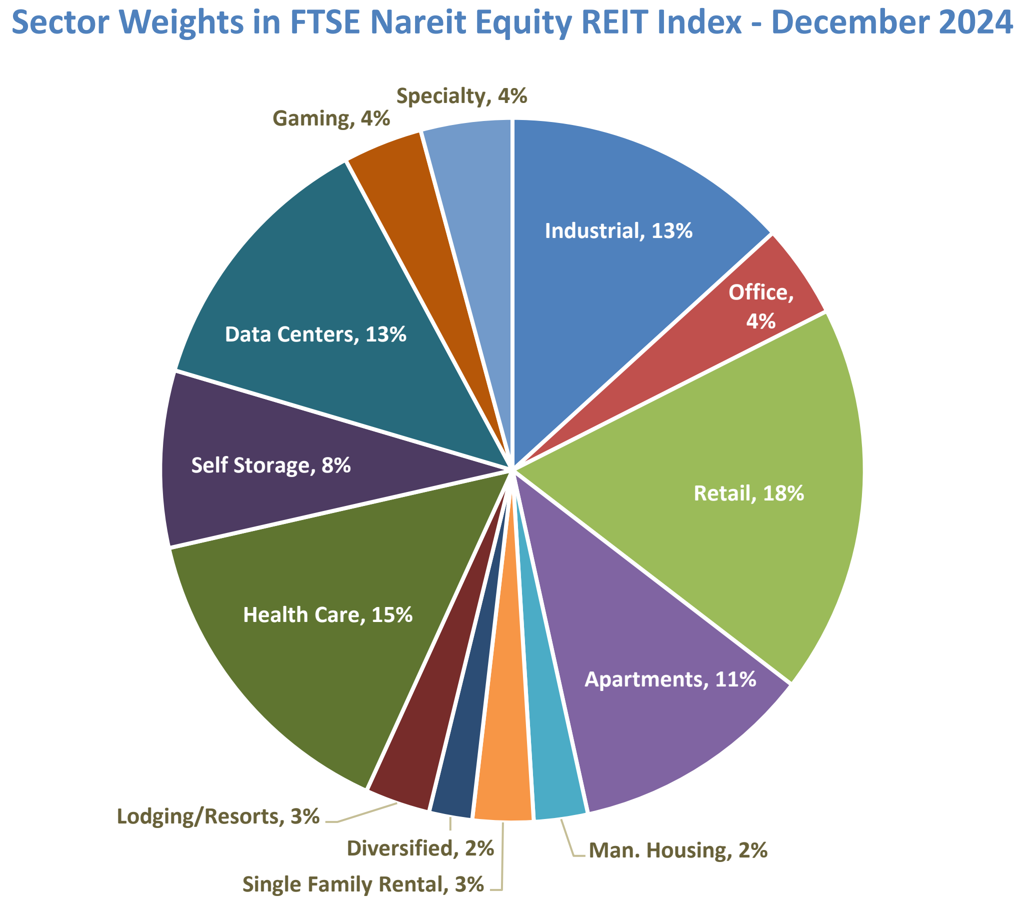
Alternative Property Sectors

- The REIT market tends to adopt new sectors more quickly than the private market, and the REIT market has a much heavier emphasis on alternative sectors.



Source: PREA, Nareit

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Good Returns & Low Volatility

- One must be careful in comparing volatility of real estate to other asset classes.

- The NCREIF Property Index (NPI) and MSCI/PREA U.S. Property Fund Index are based on appraised values, which typically lag and are smoother than market based prices.
  - Further, due to illiquidity, real estate may by its nature react more gradually to changing conditions than public market securities.

- Also, the indices may not reflect the risk of the actual real estate strategy being undertaken by an investor.
  - Indices do not usually include higher risk types of real estate investments, and the NPI is unlevered.

- Using annual data (as on previous slides) mitigates the appraisal smoothing issue, but does not necessarily entirely solve it.

Appraisals vs. Transaction Prices

- An index based on transaction prices may provide a more accurate view of risk.

Annual price returns, 2001* to 2023:

	RCA CPPI (transaction price based)	NCREIF (appraisal based)
Ave. price return/year	3.83%	4.16%
Volatility (prices)	8.50%	8.49%

Sources: PREA Research, MSCI, NCREIF

- The RCA CPPI is an index based on actual transactions prices for properties.
- The RCA CPPI is based on a broader universe (all transactions above $2.5 million) than NCREIF (institutionally-owned properties) and therefore the two may not be exactly comparable.
- As transaction price indices do not include returns from property income, the table above compares only returns from price changes**
  - see A Primer on Commercial Real Estate Indices, *PREA Research Report*, December 2020, for an overview of the various indices measuring U.S. commercial real estate returns

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* The RCA CPPI begins at the end of 2000.

** The NCREIF price returns are from the cashflow version of the NCREF Property Index.

Good Returns & Low Volatility

- A risk measure less affected by the different characteristics of private and public markets is **maximum drawdown**
  - the greatest peak-to-trough loss experienced over a time period

- **Maximum drawdown over Q1 1978 to Q4 2024:**

S&P 500	Bloomberg US Aggregate Bond Index	NCREIF Property Index
-45.4% (Q3 2007 - Q1 2009)	-15.9% (Q4 2020 – Q3 2022)	-23.9% (Q2 2008 - Q4 2009)

Based on quarterly returns.

PREA Resources

- For a fuller discussion of the volatility of real estate compared to other asset classes, including the effect of appraisal smoothing, leverage and investor strategy, see: "Is Real Estate Really a Low Volatility Asset Class?", *PREA Quarterly*, Winter 2011

- For research on the effects of appraisal smoothing, methods to "de-smooth" real estate returns to make them comparable to public market indices, and the effects on asset allocation decisions, see: "Smoothing and Implications for Asset Allocation Choices", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2007.

Income Generation

Recent income generation by asset class (as of Q4 2024):

Real estate, different views on the asset class…

Income return on NCREIF Property Index	Cashflow return (i.e., net of CAPEX) on NCREIF Property Index	Income return on MSCI/PREA U.S. Property Fund Index, gross of fees	Income return on MSCI/PREA U.S. Property Fund Index, net of fees	Dividend yield on FTSE/Nareit Equity REIT Index
4.77%	3.32%	3.89%	3.00%	3.94%

… compared to equities and bonds:

Dividend yield on S&P 500	Yield on Bloomberg US Aggregate Bond Index
1.28%	4.91%

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PREA Resources

- Incorporating the effect of ongoing capital expenditures, leverage, and fund fees can reduce the observed income advantage of real estate relative to other asset classes, see “Is Core Real Estate an Income Producing Asset Class? Maybe Not”, *PREA Quarterly*, Winter 2018

- For a more detailed discussion on the income return from real estate and caveats in interpreting it, see also: “The Income Return from Real Estate: Do You Know What You Are Really Getting?”, *PREA Quarterly*, Summer 2013

Diversification

Correlations (annual returns):

	Large Cap Equities	Midcap Equities	Small Cap Equities	Treasuries	Inv. Gr. Corp. Bonds	High Yield Corp. Bonds	Hedge Funds
NCREIF Property Index (appraisal based index)	0.07	0.07	0.05	0.01	-0.20	-0.34	0.14
RCA CPPI (transaction price based index, price returns only)	0.25	0.19	0.19	-0.04	-0.17	-0.24	0.13

Based on annual returns to: NCREIF Property Index, RCA CPPI, Russell Top 200 Index, Russell Midcap Index, Russell 2000, Bloomberg US Treasury Index, Bloomberg US Corp. Investment Grade Index, Bloomberg US Corp. High Yield Index, Credit Suisse Hedge Fund Index. Correlations based on annual data to 2024 for NPI, 2023 for RCA CPPI, and beginning in 1978 (NPI), 2001 (RCA CPPI), 1979 (equity indices), 1978 (Treasury and investment grade), 1984 (high yield), and 1994 (hedge funds).

Sources: PREA Research, MSCI, NCREIF, LSEG Datastream

Diversification

- Using an appraisal based index for real estate tends to deflate the reported correlations (due to appraisal smoothing)

- However, even using a transaction price based index, real estate still shows low correlations with other asset classes
    - good diversifier within a portfolio

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PREA Resources

- See "Yes, Stocks, Bonds, and Real Estate Are Driven by Different Risk Factors", *PREA Quarterly*, Fall 2018, for a look at differences across asset classes.

- For a discussion of real estate as a diversifier in the context of the financial crisis, see: "Real Estate's Evolution as an Asset Class", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2009

- Investors are increasingly concerned with hedging against extreme market events, or "tail risk", and worried that the relationships between asset classes can change with market conditions . For an analysis, see:

  PREA Research Report, "Risk Management and Diversification with Real Estate: Correlation is Not Enough", February 2012

- For a discussion of tail-risk in real estate portfolios, see: "Hedging 'Fat–Tail' Risk in Real Estate", *PREA Quarterly*, Summer 2010

PREA Resources

- In managing risk, many institutional investors, especially private sector pension plans, have adopted a **Liability Driven Investing (LDI)** approach:

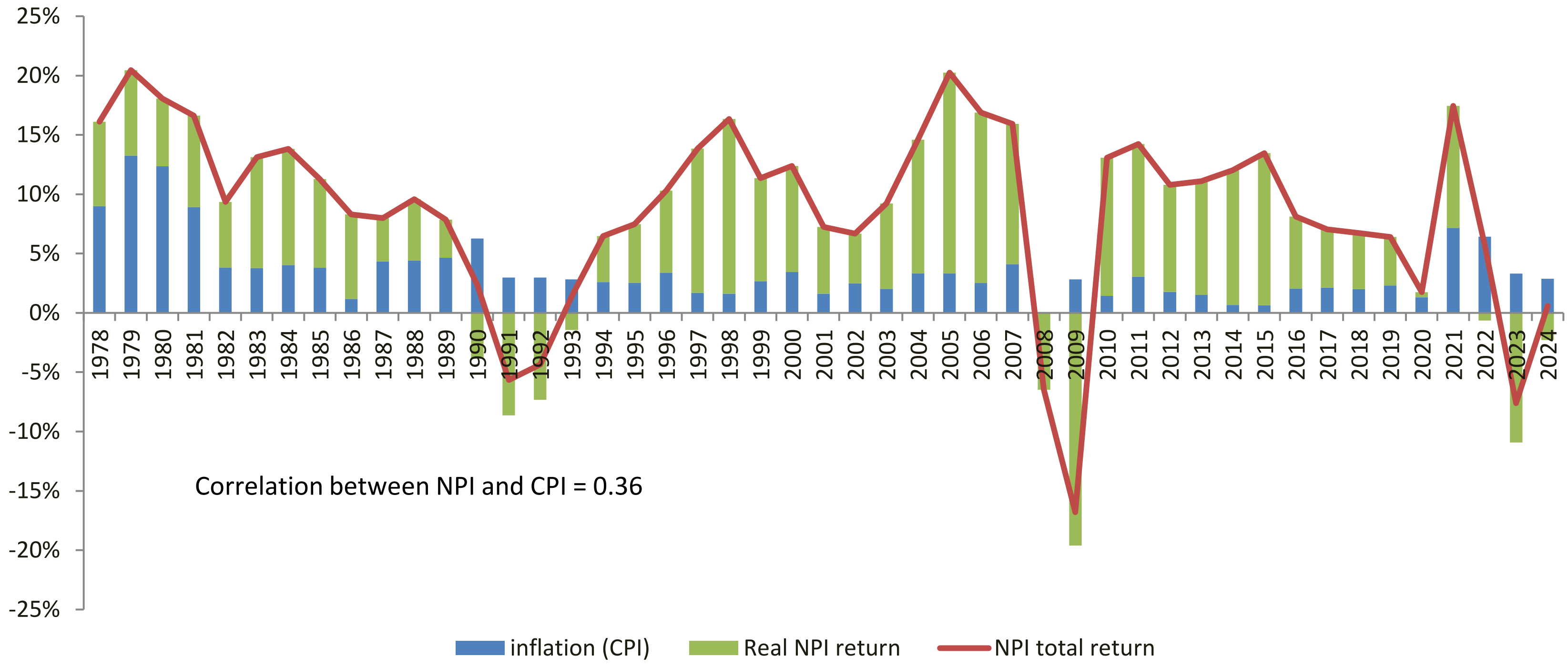
- For a discussion of LDI for institutional investors, see: "Incorporating Liability Driven Investment Strategies Into Investment Policy", *PREA Quarterly*, Summer 2010

- For a description of LDI and analysis of real estate's role in hedging plan liabilities, see: *PREA Research Report*, "Liability Driven Investing: What Is It and Does Real Estate Fit?", September 2011

- See also, "Impact of Pension Plan Liabilities on Real Estate Investment", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2005

Inflation Hedge

Annual inflation, nominal and real returns to real estate:



Sources: PREA Research. NCREIF. Bureau of Labor Statistics

Real estate's inflation hedging abilities have been tested using a variety of methodologies, with different conclusions. There remains debate about whether real estate is more effective as an inflation hedge than other asset classes.

Real return approximated in chart by nominal return to NPI minus inflation.

Inflation

Compound real (i.e., after inflation) returns to real estate, to Q4 2024:

	Annualized compound real return
1 year	-2.2%
3 years	-4.6%
5 years	-0.9%
7 years	0.6%
10 years	2.7%
Since inception (1978)	4.8%

Based on NCREIF Property Index and CPI.
Sources: PREA Research, NCREIF, Bureau of Labor Statistics

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PREA Resources

- For more detailed discussions of real estate's ability to hedge inflation see:
- "What Would Higher Inflation Mean for Real Estate?", *PREA Quarterly*, Fall 2021
- "A Framework for Assessing the Impact of Inflation on Real Estate" *PREA Quarterly*, Spring 2022
- "Private Commercial Real Estate Equity Returns and Inflation", PREA-sponsored special real estate issue of *The Journal of Portfolio Management*, 2007

Part of the Investable Universe

- Commercial real estate is a large part of the universe of potential investments faced by institutions.
- See earlier slide: Real estate equity (private+public) held by investors estimated at $3.0 trillion in the US. This would be much larger if included owner-occupied property.
- Across all Four Quadrants, value of institutional US market estimated at $8.9 trillion
- Real estate has a significant allocation in the global market portfolio
  - Traditional portfolio theory views the allocations of the market portfolio as the optimal market-neutral allocations
- **As a significant part of the investable universe, an institution with no real estate allocation could be viewed as making an active bet that real estate will underperform.**

This presentation is not meant to cover all considerations in determining a real estate allocation; it presents only a brief outline of the characteristics of real estate most commonly cited as benefits. The discussion is based on real estate as a general asset class; specific investment strategies within real estate may have different characteristics.

No consideration has been given to investor-specific circumstances, goals, and risk tolerances that must be considered when forming investment policy.

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