

# What Have We Learned from 25 Years of CRE and REIT Performance Data?



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**With millions of Americans relying** on defined benefit pensions for their retirement security, the investment allocation decisions of these funds are of critical importance. While commercial real estate (CRE) has become an integral part of defined benefit pension fund portfolios, how institutional investors have implemented their real estate allocations has varied widely. Some have embraced public and private real estate; others have focused solely on private real estate.



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Given that REITs have been leaders in providing access to new and emerging property sectors, global real estate, and best-in-class operational and sustainability performance, institutional investors should increasingly consider REITs in their portfolio construction endeavors. Twenty-five years of pension fund investment allocation and performance data further bolster this argument.

## The Numbers

CEM Benchmarking’s proprietary data offers a unique lens to view pension plan activities. CEM is a global investment and pension administration benchmarking firm with access to a rich dataset on pension investment performance.

In research sponsored by Nareit, CEM took a comprehensive look at investment allocations and realized investment performance across 12 asset classes over a 25-year period (1998–2022) using a dataset covering more than 200 US public- and private-sector pensions with \$4.1 trillion in combined assets under management (AUM). This combined AUM was estimated to be nearly 40% of total AUM for all US defined benefit funds as of year-end 2022. An important and distinguishing feature of the data is that it provides the actual realized performance, net of investment costs, of the assets plan managers chose.

## Adjusting for Private Market Reporting Lags

The research commenced in 1998, the year CEM started to collect hedge fund and listed REIT data, and concluded in 2022 to allow for appropriate adjustments for reporting lags associated with illiquid asset classes. A reporting lag is the delay between the end of a reporting period and the time the results are disclosed. Illiquid assets such as private equity and private real estate commonly have reporting lags measured in months or even several quarters.

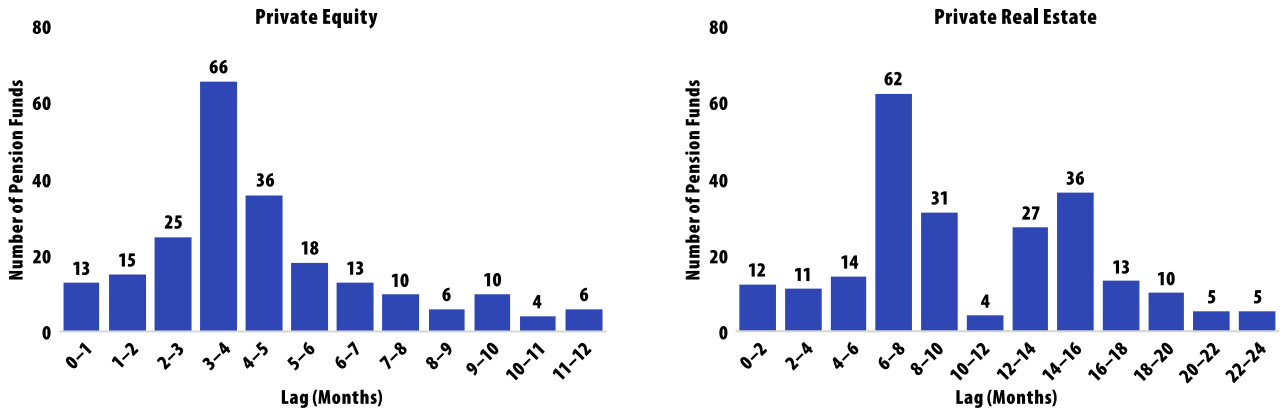
Multiple factors can create a timing difference between public and private markets. For example, appraisals are typically completed periodically rather than continuously. In addition, prudent appraisals that use limited and inexact comparables may naturally introduce some degree of valuation smoothing. A reporting lag between the asset manager and asset owner may also occur because of the time required to compile, verify, and audit the data before it is released.

Typically, performance adjustments for reporting lags have been made using a single assumption applied to all investment returns in an illiquid asset class. CEM data, however, allow returns to be adjusted for reporting lags at the individual pension fund level.

By the Numbers—1998–2022	
Best-Performing Asset Class (Net Total Return): Private Equity	11.83%
Worst-Performing Asset Class (Net Total Return): US Other Bonds	3.75%
Best-Performing CRE Style (Net Total Return): Internally Managed Direct	9.76%
Worst-Performing CRE Style (Net Total Return): Funds of Funds	6.59%
Annual Net Total Return REIT Outperformance Over Private Real Estate	2.08%
REIT Volatility	19.41%
Private Real Estate Volatility After Reporting Lag Adjustments	17.72%
REITs and Private Real Estate Correlation After Adjusting for Lag	0.90

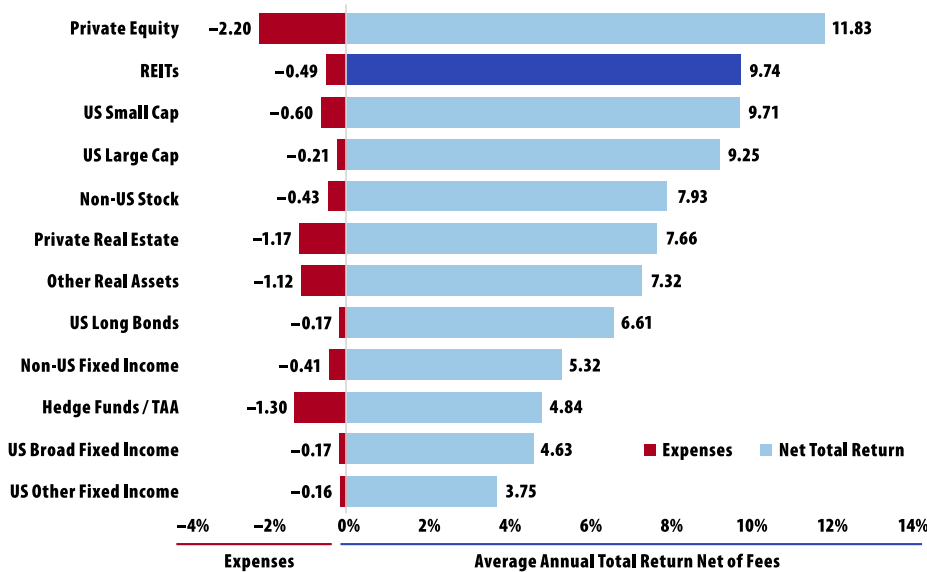
Source: CEM Benchmarking, 2024

**Exhibit 1: Distributions of Reporting Lags, 1998–2022**



Source: CEM Benchmarking, 2024

**Exhibit 2: Average Annual Net Total Returns and Expenses by Asset Class, 1998–2022**



Source: CEM Benchmarking, 2024. Returns are adjusted for reporting lags at the individual pension fund level.

In addition to improving the accuracy of the returns, volatilities, and correlations, these adjustments at the fund portfolio level allow observation of the distributions of reporting lags across funds. Exhibit 1 depicts the distributions of reporting lags for the private equity and private real estate asset classes.

The distribution of private equity reporting lags was centered on three to four months. The distribution of lags for private real estate was bimodal, suggesting variance in valuation frequency of portfolio assets. It is common for asset owners to report private market fund

performance one quarter lagged. This likely explains the three months of lags seen in both asset classes. The longer lags observed in the private real estate data may be explained, at least in part, by appraisal smoothing. Real estate appraisals are generally focused on observed private market transactions, which can be infrequent, while private equity valuation uses public market activity more directly as one of its inputs.

### REITs Outperformed Private Real Estate

Over the 25-year period, striking investment performance differences can be seen across the 12 examined asset classes. Exhibit 2 displays the average annual net return and average annual investment cost in percentages for each asset class after adjusting for reporting lags at the individual pension fund level.

Private equity had the highest average gross and net total returns, as well as the highest annual fees. The two worst-performing asset classes also had the lowest investment management expenses. Although private real estate performance was in the middle of the pack, REITs posted the second-highest average annual net total return,



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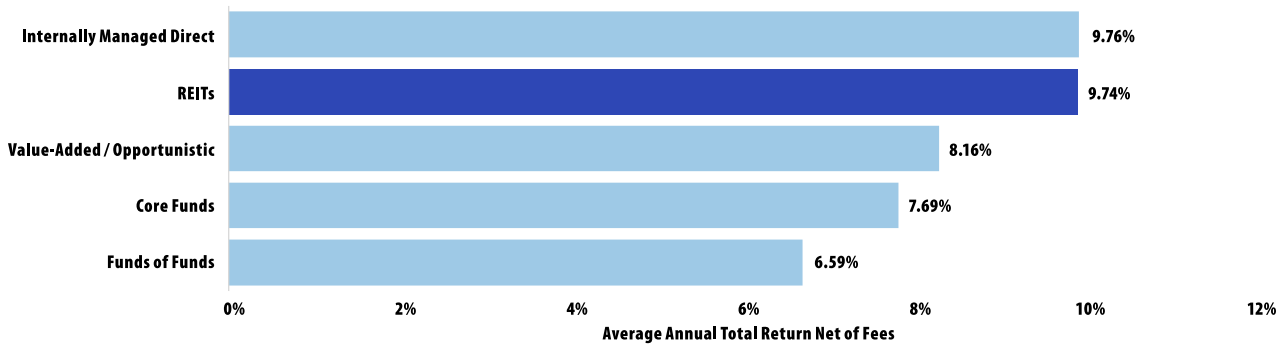
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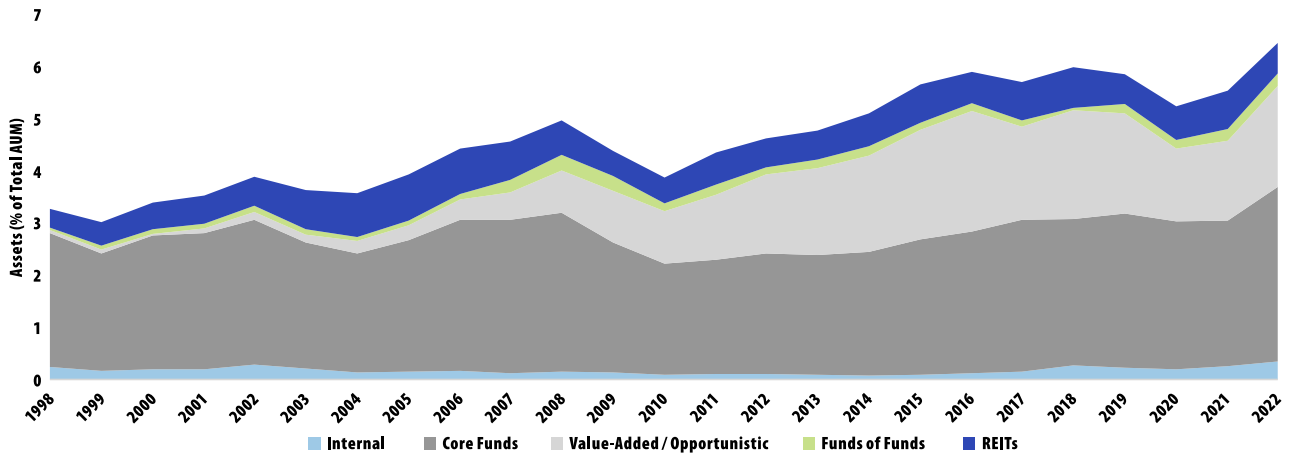
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**Exhibit 3: Real Estate Average Annual Net Total Returns by Investment Style, 1998–2022**



Source: CEM Benchmarking, 2024. Returns are adjusted for reporting lags at the individual pension fund level.

**Exhibit 4: Defined Benefit Asset Allocation to Real Estate by Investment Style, 1998–2022**



Source: CEM Benchmarking, 2024

outperforming private real estate by 2.08% on a net basis. This outperformance was not an artifact of adjusting for reporting lags. Approximately one-third of this spread was driven by REITs’ favorable fee structures. Annual REIT fee loads averaged 0.49%; private real estate expenses were considerably higher at 1.17%.

**Internally Managed Direct and REITs Led CRE Performance**

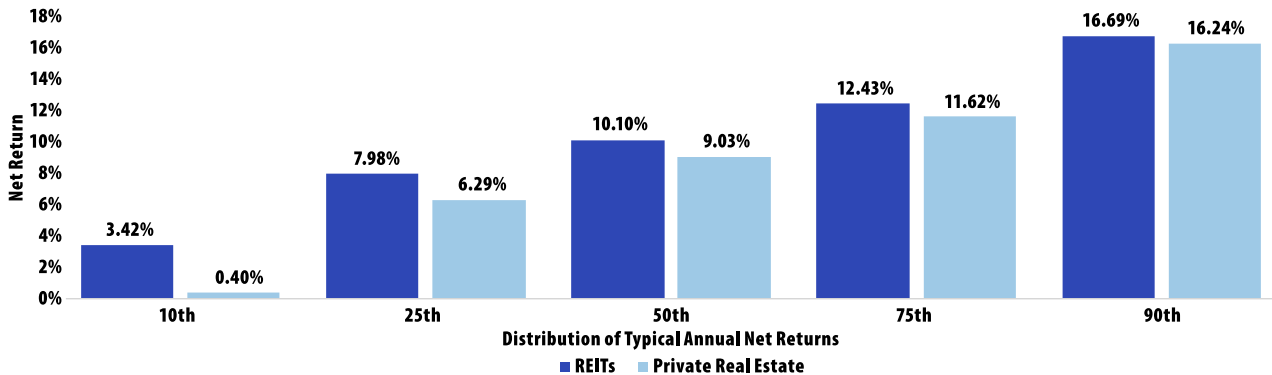
Drilling down beyond the broad private real estate asset class reveals that performance across CRE investment styles differed markedly. Exhibit 3 presents real estate average annual net total returns from 1998 to 2022 by investment style.

Real estate internally managed by pension funds posted the highest average annual total returns net of fees. Given the significant human capital

requirements of these funds, this strategy typically can be implemented only by larger pension funds. Average REIT net performance followed closely, differing by just 2 basis points. The fund-of-funds investment style, which is often used by smaller pension funds, had the lowest average annual net total return—an unsurprising result given its double layer of fees. Fund-of-funds fee structures similarly pull down average net total returns across all private asset classes—a likely impediment to future growth. Exhibit 4 illustrates US defined benefit pension plan real estate allocations by investment style as percentages of total AUM.

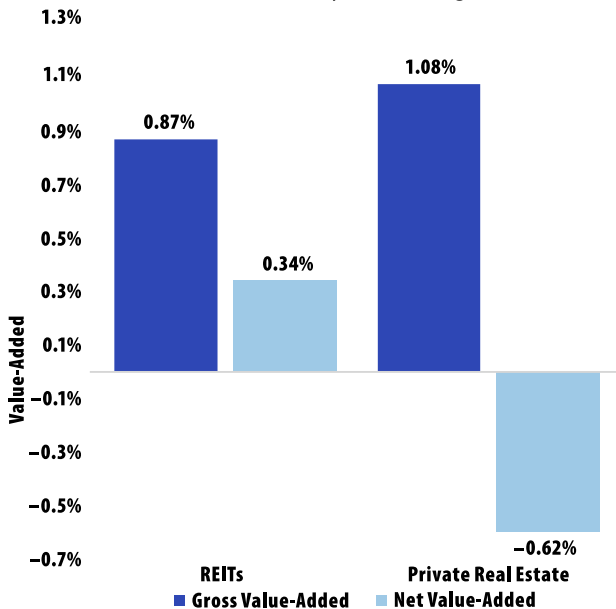
From 1998 to 2022, CRE allocations to private real estate value-added / opportunistic strategies grew the most. Despite the increased investor interest in these higher risk-and-return strategies, these investments

**Exhibit 5: Distributions of Real Estate Average Annual Net Total Returns, 1998–2022**



Source: CEM Benchmarking, 2024. Returns are unadjusted for reporting lags.

**Exhibit 6: Real Estate Value-Added by Active Management, 1998–2022**



Source: CEM Benchmarking, 2024. Returns are unadjusted for reporting lags and use self-reported benchmarks.

have delivered modest net outperformance for higher active risk. The average annual total return net of fees for the value-added / opportunistic style was just 0.47% more than the core fund average. Given the typical higher risk and leverage levels, the magnitude of this outperformance spread is disappointing. These results, however, are not unusual. The Fall 2023 *PREA Quarterly* feature “[Academics Question the Value of Private Real Estate Funds: What’s an Investor to Do?](#)” summarized academic research that consistently found closed-end private real estate fund underperformance.

### REITs Outperformed Private Real Estate Across The Distribution

Despite the material outperformance of REITs over the examined 25-year period, some private real estate investors suggest that by choosing top-quartile managers that display persistently high performance, private real estate can outperform REITs, even if, on average, REITs outperform private real estate. To explore this notion, Exhibit 5 shows the distributions of net total returns for public listed REITs and private real estate.

Across the distributions, REITs outperformed private real estate. Interestingly, the magnitude of outperformance decreased as the performance percentiles increased. At the lowest examined performance level, the 10th percentile, the REIT net total return exceeded its private real estate counterpart by 3.02%. Among the top-performing funds, those in the 90th percentile, REITs still outperformed private real estate by 0.45%. Given the consistent REIT outperformance across the distribution, investors who believe they possess superior private real estate fund selection skills may be better off if they could adapt those skills to select top-performing REIT funds.

### Does CRE Generate Positive Alpha?

Although the historical REIT outperformance over private real estate has been documented on several fronts, do the perspectives change when focus is placed on performance relative to benchmarks? Exhibit 6 depicts the gross and net value-added returns of REIT and private real estate active

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**Exhibit 7: Correlations Among Asset Classes, 1998–2022**

	REITs	Private Real Estate	US Long Bonds	US Large Cap	US Small Cap	Non-US Equities	Private Equity	Hedge Funds
REITs	1.00	0.90	0.19	0.59	0.65	0.59	0.58	0.49
Private Real Estate		1.00	0.17	0.55	0.59	0.56	0.61	0.43
US Long Bonds			1.00	0.03	-0.02	-0.06	-0.01	-0.13
US Large Cap				1.00	0.93	0.89	0.87	0.85
US Small Cap					1.00	0.89	0.90	0.76
Non-US Equities						1.00	0.87	0.83
Private Equity							1.00	0.79
Hedge Funds								1.00

**Source:** CEM Benchmarking, 2024. Returns are adjusted for reporting lags at the individual pension fund level.

management relative to their respective benchmarks. Note that benchmarks are self-selected by investors, which may result in an upward bias in value-added measures.

Exhibit 6 illustrates that CRE as an asset class offered the potential to add value prior to investment management expenses for both REITs and private real estate. Gross value-added returns for REITs and private real estate were 0.87% and 1.08%, respectively. Unfortunately, the average investment costs for private real estate exceeded its gross value-added return, meaning that institutional investors, on average, underperformed their benchmarks net of investment costs; the net value-added return was -0.62%. In contrast, the average listed equity REIT portfolio still delivered 0.34% of value-added return net of all investment costs.

### Public and Private Real Estate Are Highly Correlated

When illiquid returns are adjusted for reporting lags at the individual pension fund level, REITs and private real estate are highly correlated. Exhibit 7 details the correlation matrix among REITs, private real estate, and six other asset classes.

The broadest group of highly correlated asset classes was the equity asset classes (US large cap stocks, US small cap stocks, non-US equities, and private equity) along with hedge funds. Correlation coefficients in this group ranged from 0.76 to 0.93. The high correlation of listed equities to private equity emerged only after accounting for reporting lags in private equity.

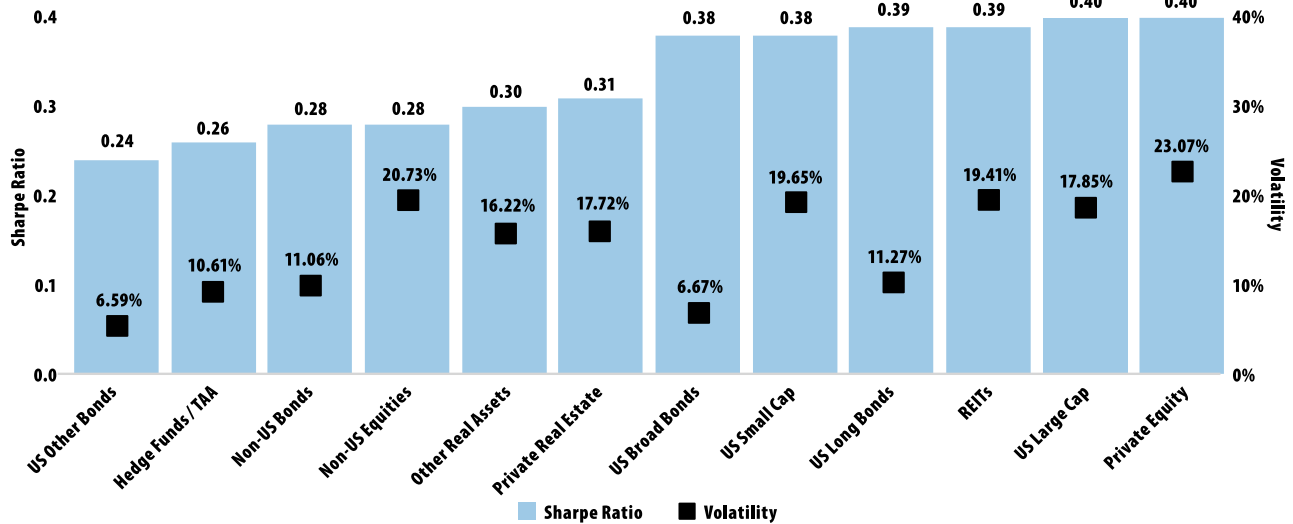
REITs and private real estate also became highly correlated once adjustments were made for private real estate reporting lags. The correlation coefficient for the real estate asset classes was 0.90, an unsurprising result given the similarities in underlying assets. The two CRE asset classes also had similar correlations with the other examined asset classes, highlighting that REITs and private real estate offer comparable diversification benefits.

### REITs and Private Real Estate Have Comparable Volatilities

On an unadjusted basis, REITs have tended to exhibit substantially higher volatility than their private real estate counterpart. This observed relationship has spurred considerable investor debate regarding CRE’s “true” volatility. Exhibit 8 illustrates volatilities and risk-adjusted returns for 12 asset classes from US defined benefit pension funds from 1998 to 2022 after adjusting for private market reporting lags. Asset class risk-adjusted returns were calculated using Sharpe ratios.

Private equity was the riskiest asset class. Its annualized volatility of 23.07% reflected both the large standard deviation of average returns across years as well as the sizable dispersion of returns between funds within years. Private equity also had the highest Sharpe ratio, indicating a favorable return-and-risk balance. US other bonds had the lowest volatility and risk-adjusted return measures. The real estate asset classes had comparable volatilities after accounting

**Exhibit 8: Volatilities and Risk-Adjusted Returns by Asset Class, 1998–2022**



Source: CEM Benchmarking, 2024. Returns are adjusted for reporting lags at the individual pension fund level.

for the reporting lag in private real estate. REITs and private real estate volatilities were 19.41% and 17.72%, respectively. Although risk was similar, REITs provided higher risk-adjusted returns than private real estate.

**So What Have We Learned?**

CEM’s rich and proprietary dataset provides a unique lens through which to view investment allocations and realized investment performance across asset classes for public and private sector pensions. Analysis of 25 years (1998 to 2022) of performance data shows the following:

- On average, REITs outperformed private real estate by 2.08% on an annual net total return basis.
- Internally managed direct and REITs were the top-performing CRE investment styles.
- REITs outperformed private real estate across the distributions of average annual net total returns.
- REITs and private real estate both generated alpha before fees, but only REITs maintained alpha after fees.
- After adjusting for reporting lags, REITs and private real estate were highly correlated; the correlation coefficient was 0.90.
- The CRE asset classes had comparable volatilities after accounting for reporting lags in private real estate, but REITs provided higher risk-adjusted returns.

These results clearly show that REITs are real estate with attractive performance attributes. Yet CEM data as of 2022 showed that REITs, on average, accounted for just 0.6% of US defined benefit pension fund investment portfolios; the private real estate allocation was 5.9%.

REITs can help investors achieve their real estate investment objectives by offering relative value opportunities, complementing existing portfolio allocations through broader diversification and sustainability enhancement, and improving overall portfolio performance. With this in mind, institutional investors should further explore how REITs can play greater tactical and strategic roles in their investment portfolios. ■

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