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Optimizing Risk and Return in Pension Fund Real Estate:

REITs, Private Equity Real Estate and the Blended Portfolio Advantage




National Association of Real Estate Investment Trusts®

Overview

For most investors, gaining access to real estate exclusively through publicly traded REITs is the most practical way to invest in the asset class. For example, defined contribution retirement plans and other post employment benefit trusts require significant, if not daily, liquidity and market pricing. However, defined benefit pension plans and some other institutional investors present a more complex picture. Traditionally, these investors have not looked to their real estate portfolios as a source of liquidity, and many have allocated most of their real estate investment capital to direct property investment or to private equity real estate funds.

While many defined benefit plan investors include publicly traded REITs within their investment programs, REITs generally occupy a surprisingly small portion of the total real estate portfolio. It is surprising, not only because of the strong historical investment performance of REITs when compared with private real estate investment alternatives, but also because of institutions' heightened focus on risk management in the wake of the recent financial crisis, during which the value of REIT liquidity, transparency and investor-aligned governance structures became more apparent.

This Special Report is intended to help pension funds and other institutional investors reassess their relative allocations to two parts of the equity real estate asset class—private funds and publicly traded REITs. The past 22 years of historical data show that an optimally blended portfolio including approximately one-third in REITs has provided stronger returns, even on a risk-adjusted basis, than portfolios dominated by private real estate investments, because of:

Strong outperformance by REITs: Publicly traded REITs have provided not only liquidity and transparency to commercial real estate investors, but also a significant performance premium, on average, compared with private equity real estate funds over long-term holding periods. Plus, REIT investing is much less costly than private real estate investing.

Reduced volatility through private/public diversification: While publicly traded REITs and private real estate funds both invest in commercial properties, the difference in the timing of returns – the "lead/lag" relationship between REITs and private real estate – creates an opportunity for diversification within the real estate asset class that can demonstrably reduce volatility. Conversely, investors with insufficient holdings of publicly traded REITs have higher portfolio risk.

An optimally blended portfolio of private equity real estate and about one-third publicly traded REIT investments produced positive double-digit or single-digit average annual returns for all rolling five-year periods over the past 22 years without a single period of negative returns – even during the most recent real estate market crisis.

Given the performance advantages of publicly traded REITs relative to private real estate funds and the risk-reduction benefits of combining public and private real estate investment, it now is clear that many pension funds should reassess how they invest in real estate. The "REIT third" can be a valuable tool to help rebuild some of the pension fund wealth lost during the real estate downturn, and to cushion against future shocks.

REITs Deliver Higher Performance and a Different Return Cycle

Recent analyses by NAREIT, the Pension Real Estate Association, Cohen & Steers and Cornerstone Real Estate Advisors have revealed that REITs have outperformed private equity real estate funds over various time periods, providing the fuel to boost the performance of blended REIT and private equity real estate portfolios.

NAREIT's analysis of the performance of REITs, based on the FTSE NAREIT All Equity REITs Index, and private equity real estate core, value-added and opportunity funds, based on NCREIF-Townsend Fund Indices data, has shown that REITs outperformed private equity real estate funds over the last full real estate cycle (Exhibit 1), as well as over the bull market portion of the cycle, when opportunity and value-added funds with their higher leverage would have been expected to outperform.

REITs are the sparkplug to boost portfolio performance and a powerful diversifier to reduce volatility.

Over their full cycles, and net of fees and expenses, REITs delivered a total return of 802 percent, or 13.4 percent at a compound annual rate, significantly outpacing core funds at 272 percent, or a 7.7 percent annual rate; value-added funds at 318 percent, or a 8.6 percent annual rate; and opportunity funds at 621 percent , or a 12.1 percent annual rate.

REITs' higher returns, however, are delivered on a different cycle than private equity real estate fund returns. Because public equity markets are completely liquid, transparent and efficient, REIT share prices respond quickly to investors' anticipation of future economic and market developments. Consequently, the REIT return cycle leads the private real estate return cycle going into both downturns and recoveries. In the last real estate market cycle, REIT returns peaked approximately one year ahead of those of private real estate funds. REITs also began their bull market approximately three years ahead of private funds (Exhibit 1).

The lead/lag relationship between REIT and private equity real estate fund returns provides the basis for REITs to act not only as the sparkplug for improved performance of the blended real estate portfolio, but also as a powerful diversifier to reduce overall portfolio volatility.

Exhibit 1: Net Returns over the Market Cycle
Equity REITs and Private Equity Real Estate Funds

Form of CRE Investment	Leverage	Fees and Expenses	Full Cycle (Peak to Peak)		Bull Market Only (Trough to Peak)	
			Duration	Returns	Duration	Returns
Property Values	0%	≈115 bps	17¾ years 1990q3 – 2008q2	266% 7.6% / yr	15 years 1993q2 – 2008q2	322% 10.1% / yr
Core Funds	≈20%	107 bps	17¾ years 1990q3 – 2008q2	272% 7.7% / yr	15 years 1993q2 – 2008q2	341% 10.4% / yr
Value Added Funds	54%	131 bps	17¼ years 1990q3 – 2007q4	318% 8.6% / yr	14½ years 1993q2 – 2007q4	430% 12.2% / yr
Opportunistic Funds	67%	221 bps	17¼ years 1990q3 – 2007q4	621% 12.1% / yr	14 years 1993q4 – 2007q4	964% 18.4% / yr
Publicly Traded REITs	≈40%	≈50 bps	17½ years 1989q3 – 2007q1	802% 13.4% / yr	16½ years 1990q3 – 2007q1	1,041% 15.9% / yr

Source: NAREIT® analysis of data from NCREIF (NPI, ODCE, Townsend Fund Indices) and FTSE NAREIT Equity REITs Index.

Diversification: The Basis of Risk Reduction

A key to constructing any successful investment portfolio is diversification: combining holdings in assets whose returns move separately from each other, thereby bringing down the volatility of the portfolio and providing the opportunity to capture the upside. Combinations of different types of private equity real estate funds alone cannot provide the benefit of diversification, because their values all tend to move together.

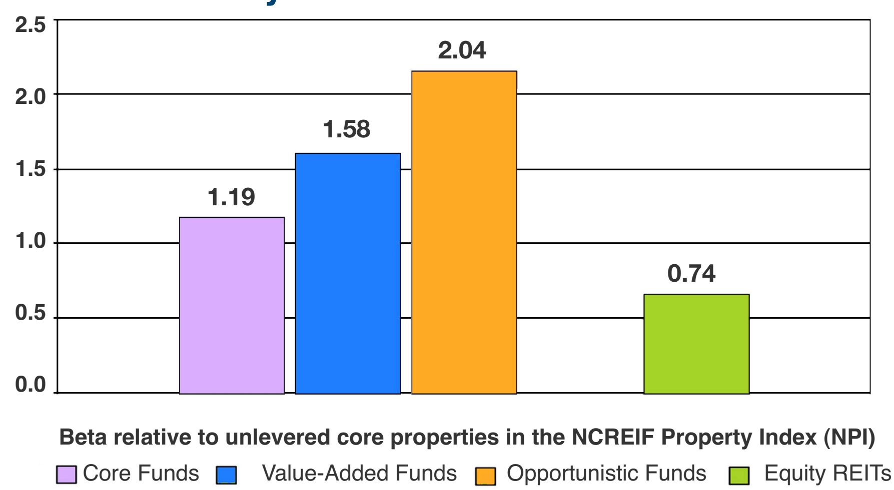
For example, an investor currently holding a portfolio of direct investments in unlevered core properties cannot diversify by also holding positions in private equity core real estate funds, because the returns to core fund investments are simply levered versions of the returns to unlevered core property investments.

REIT returns lead private real estate returns, providing temporal diversification that reduces risk.

The beta of core funds relative to unlevered core properties is 1.19, meaning that core funds are closely correlated with unlevered core properties (Exhibit 2). Rather than diversify the unlevered private real estate portfolio, the core funds actually increase its volatility. (Returns on core funds and unlevered core property investments are measured, respectively, by the ODCE index published by the National Council of Real Estate Investment Fiduciaries, or NCREIF, and the NCREIF Property Index, or NPI.)

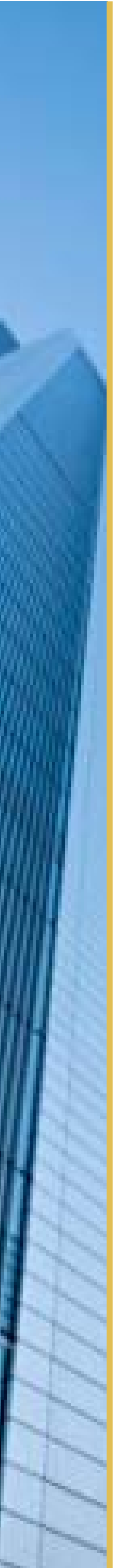
The same is true of positions in other types of private equity real estate funds investing in value-added or opportunistic strategies. The beta of value-added funds is 1.58 relative to unlevered core property holdings, while opportunistic funds show a beta of 2.04 (Exhibit 2). In both cases, private real estate fund holdings simply amplify the volatility of the real estate portfolio by applying increasing amounts of leverage to investments whose values move in lockstep with the values of other private real estate investments. (Returns on value-added and opportunistic funds are measured by the NCREIF/Townsend Fund Indices.)

Exhibit 2: Diversification
REITs Diversify a Private Real Estate Portfolio



Note: Based on quarterly data for NCREIF Property Index, NCREIF ODCE, and FTSE NAREIT Equity REITs Index for 1978q1–2010q3; NCREIF Funds Indices for Value-Added funds for 1983q2-2010q3; and NCREIF Funds Indices for Opportunistic funds for 1988q4-2010q3. Fees and expenses are assumed to be 115 bps per year for unlevered core properties (NPI) and 50 bps per year for publicly traded equity REITs; fees and expenses for core, value-added, and opportunistic funds are as reported. Source: NAREIT® analysis of data from NCREIF and FTSE NAREIT Equity REITs Index

Publicly traded REITs, though, are different. The beta of the FTSE NAREIT All Equity REITs Index relative to the NPI is less than 1.0 – in fact, just 0.74 (Exhibit 2). The low beta means that REIT returns have a low correlation to the NPI and private equity real estate funds. Consequently, adding REIT stock holdings actually *reduces* the volatility of a private real estate portfolio. Even though REITs invest in the same universe of commercial properties, and even though they employ moderate leverage, REIT returns lead returns on private real estate investments, providing temporal diversification that reduces overall portfolio risk.



Optimal Blending of Public and Private Real Estate is the Key

The lead/lag relationship between public REITs and private real estate investments means that an optimally blended portfolio is hedged against downturns in the real estate market: when one side of the real estate market is falling, the other can buoy returns for the overall real estate portfolio.

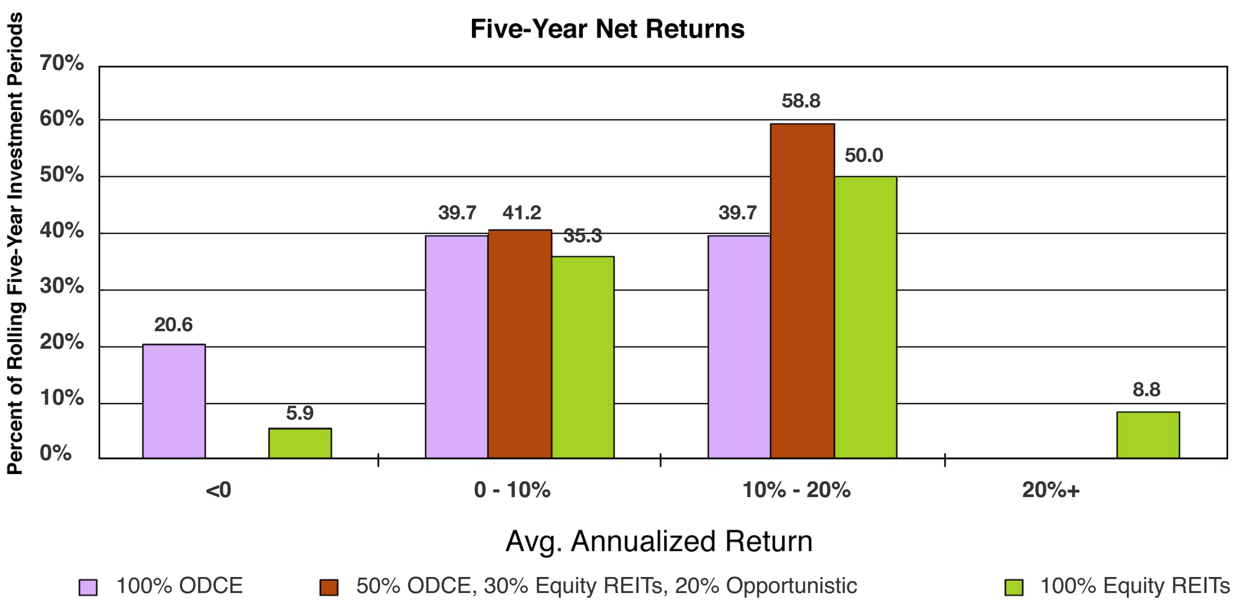
Downside protection comes from combining public and private investments.

Analysis of REIT and private equity real estate fund returns over 67 overlapping five-year holding periods since 1988:Q4 shows optimized portfolios that included both REITs and private equity real estate funds produced better risk-adjusted returns than either REITs or private equity real estate funds alone. A portfolio of 50 percent core funds, 30 percent REITs and 20 percent opportunity funds delivered 10-20 percent average annual returns in nearly 60 percent of rolling five-year holding periods over the past 22 years, positive single-digit returns in all other rolling five-year holding periods, and *never* produced a five-year period of negative returns – even during periods including 2008, 2009 and 2010, when commercial property values declined dramatically (Exhibit 3).

By comparison, a portfolio of core funds alone, often regarded as the safest real estate investments, produced 10-20 percent average annual returns in only 40 percent of five-year holding periods and negative returns in *more than 20 percent of five-year holding periods*.

The upside potential from the blended portfolio comes from both publicly traded equity REITs and opportunistic private real estate funds—but the downside protection comes from the diversification that results from *combining* both public and private investments in the blended portfolio.

Exhibit 3: Blended Portfolio Performance Combining REITs and Private Real Estate



Since 1988:Q4 there has never been a five-year investment period during which a blended portfolio of 50% core, 30% REITs, and 20% opportunistic investments experienced negative net returns.

Note: Based on quarterly net total returns of FTSE NAREIT Equity REIT Index, NCREIF Open-End Diversified Core Equity (ODCE) Funds Index, and NCREIF/Townsend Fund Indices, 1988Q4-2010Q3. Source: NAREIT analysis of data from NCREIF and FTSE NAREIT Equity REITs Index.

Public/Private Blend Maximizes Risk-Adjusted Returns

In constructing portfolios, investors must balance two competing goals: maximizing portfolio returns, and minimizing portfolio volatility. The Sharpe ratio is widely accepted as the best measure of how successfully an investment portfolio balances those goals. Specifically, the Sharpe ratio measures whether higher returns are enough to compensate for an increase in portfolio volatility and, conversely, whether lower volatility is enough to compensate for a decrease in portfolio returns.

For example, a portfolio composed 100 percent of core open-end private equity real estate funds earned net total returns averaging 5.69 percent per year over the period 1992:Q1-2010:Q3 with volatility of 6.8 percent, producing a Sharpe ratio of 0.387 (Exhibit 4).

Many institutional investors, however, do not have an all-core portfolio: more typically, they invest about half of the real estate allocation in core investments and the other half in non-core holdings, including REITs, to achieve additional return. This approach generally increases portfolio returns both absolutely and on a risk-adjusted basis. For example, a fairly typical portfolio allocating 50 percent to core funds, 21 percent to opportunistic funds, 20 percent to value-added funds, and 9 percent to publicly traded equity REITs would have generated net returns averaging 6.70 percent per year with volatility of 8.2 percent and a Sharpe ratio of 0.446 – a 15 percent increase in returns on a risk-adjusted basis (Exhibit 4).

Exhibit 4: Optimizing Real Estate Portfolio Performance

Portfolio Allocation	Volatility	Average Annual Net Returns	Sharpe Ratio
100% Core Funds	6.8%	5.69%	0.387
50% Core 21% Opportunistic 20% Value-Added 9% REITs	8.2%	6.70%	0.446
69% Core 25% REITs 6% Opportunistic	8.2%	7.48%	0.536
49% Core 30% REITs 21% Opportunistic	9.5%	8.23%	0.541

Note: Based on quarterly net total returns of FTSE NAREIT Equity REIT Index, NCREIF Open-End Diversified Core Equity (ODCE) Funds Index, and NCREIF/Townsend Fund Indices, 1992Q1-2010Q3. Source: NAREIT analysis of data from NCREIF and FTSE NAREIT Equity REITs Index.

Optimally blending the real estate portfolio, however, would have produced dramatically better risk-adjusted returns by taking full advantage of the diversification between the public and private sides of the real estate market. For example, a portfolio composed of 69 percent core funds, 25 percent publicly traded equity REITs, and 6 percent opportunistic funds would have had no greater volatility than the "typical" portfolio – 8.2 percent in both cases – but significantly higher net returns averaging 7.48 percent per year, as well as higher risk-adjusted returns with a Sharpe ratio of 0.536 (Exhibit 4).

Optimally blending public and private real estate produces dramatically better risk-adjusted returns.

For even stronger risk-adjusted returns, investors could have maintained the half of the portfolio invested in core real estate but eliminated value-added funds, obtaining their non-core exposure through REITs and opportunistic funds. A portfolio composed of 49 percent core funds, 30 percent publicly traded equity REITs, and 21 percent opportunistic funds would have generated net returns averaging 8.23 percent per year with 9.5 percent volatility. Most importantly, by taking full advantage of the diversification opportunities on the public side of the real estate market, the portfolio would have generated much stronger returns on a risk-adjusted basis, with a Sharpe ratio of 0.541 (Exhibit 4).

An Opportunity to Rebuild Value

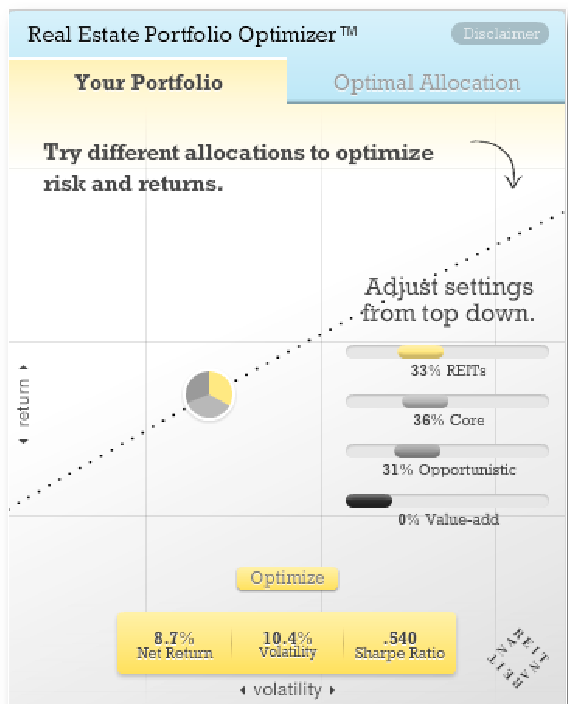
The recent real estate market crisis presents an opportunity for institutional investors to reconsider how they structure their real estate portfolios. Many investors who hoped to avoid volatility by concentrating their exposure in private equity real estate funds have been prompted to re-evaluate the importance of liquidity, transparency, and discipline, as well as reasonable costs, which are hallmarks of REIT investment.

The "REIT third" is both a risk management tool and a means to accelerate the process of rebuilding value.

The past 22 years of historical data demonstrate that an optimally blended real estate portfolio, including approximately one-third in REITs, has provided stronger returns, on both an absolute and a risk-adjusted basis, than portfolios dominated by private real estate investments. The "REIT third" should be seriously evaluated by institutional investment managers as both an important risk management tool and a means of accelerating the process of rebuilding value in defined benefit plan real estate portfolios.

NAREIT Real Estate Portfolio Optimizer™

To help investors compare the returns, volatility and Sharpe ratio (risk-adjusted return) of various real estate portfolio allocation strategies, NAREIT has developed its Real Estate Portfolio Optimizer™. The optimizer calculates actual real estate portfolio performance based on more than 176,000 possible combinations of portfolio allocations to publicly traded REITs and private equity core, value-added, and opportunistic funds.



You can use the optimizer to [test your own real estate allocation strategies]. You also can [view a video] showing how the optimizer works.

The optimizer calculates its results based on quarterly net returns from the first quarter of 1992 through the third quarter of 2010 for REITs and the three types of private equity real estate funds. REIT returns are measured by the FTSE NAREIT All Equity REITs Index, which represents a passively constructed free-float weighted portfolio of publicly traded U.S. equity REITs. However, the optimizer assumes that the investor pays fees and expenses averaging 50 basis points per year (typical for an actively managed domestic REIT mandate).

Core private real estate investment fund returns, net of fees and expenses, are measured by the Open-End Diversified Core Equity (ODCE) Index computed by the National Council of Real Estate Investment Fiduciaries (NCREIF), which represents average returns to actively managed core real estate funds in which NCREIF members, primarily pension funds, invest. Value-added and opportunistic fund returns, net of fees and expenses, are measured by the NCREIF/Townsend Fund Indices, which represent average returns to actively managed value-added and opportunistic funds in which NCREIF data-contributing members invest.

Of the 176,851 possible combinations of portfolio allocations to REIT, core, value-added, and opportunistic investments in the optimizer's data base, 591 portfolios were optimal in the sense that no other portfolio provided higher average net returns while producing lower portfolio volatility. All others were sub-optimal in the sense that there existed at least one different combination of portfolio allocations that would have produced higher average returns with the same or lower volatility, or lower volatility with the same or higher returns.

The optimizer is based only on historically realized returns as reported by the respective data sources. The optimizer is not based on projections or forecasts of any kind, nor on de-smoothing of smoothed private real estate returns. Past returns and performance are not necessarily indicative of future returns and performance, and the optimizer is not intended to provide investment advice.

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Information is based on quarterly net total returns of FTSE NAREIT Equity REIT Index, the National Council of Real Estate Investment Fiduciaries' (NCREIF) Open-End Diversified Core Equity (ODCE) Funds Index and NCREIF/Townsend Fund Indices, 1992q1-2010q3. Fees and expenses are assumed to be 50 bps per year for publicly traded equity REITs, and fees and expenses for core, value added and opportunistic funds are as reported by NCREIF. However, actual REIT fees and expenses may be higher or lower, which could affect significantly the stated portfolio results. All REIT data are derived from, and apply only to, publicly traded securities. While such data is believed to be reliable, data is subject to change or restatement. NAREIT does not warrant or guarantee for the accuracy or completeness of such data, and shall not be liable for such data or any errors or omissions therein. See http://reit.com/optimize for access to important information regarding NAREIT's Real Estate Portfolio OptimizerTM and its underlying data and assumptions.