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The Impact of Real Estate Allocation in a Diversified Portfolio

Introduction

Allocating to real estate can potentially deliver several benefits to investor portfolios. Real estate has historically had a higher risk-adjusted rate of returns—over the last five, ten, and twenty-year periods real estate investment trusts (REITs) have outperformed both equities and fixed income on an annualized basis. [1]

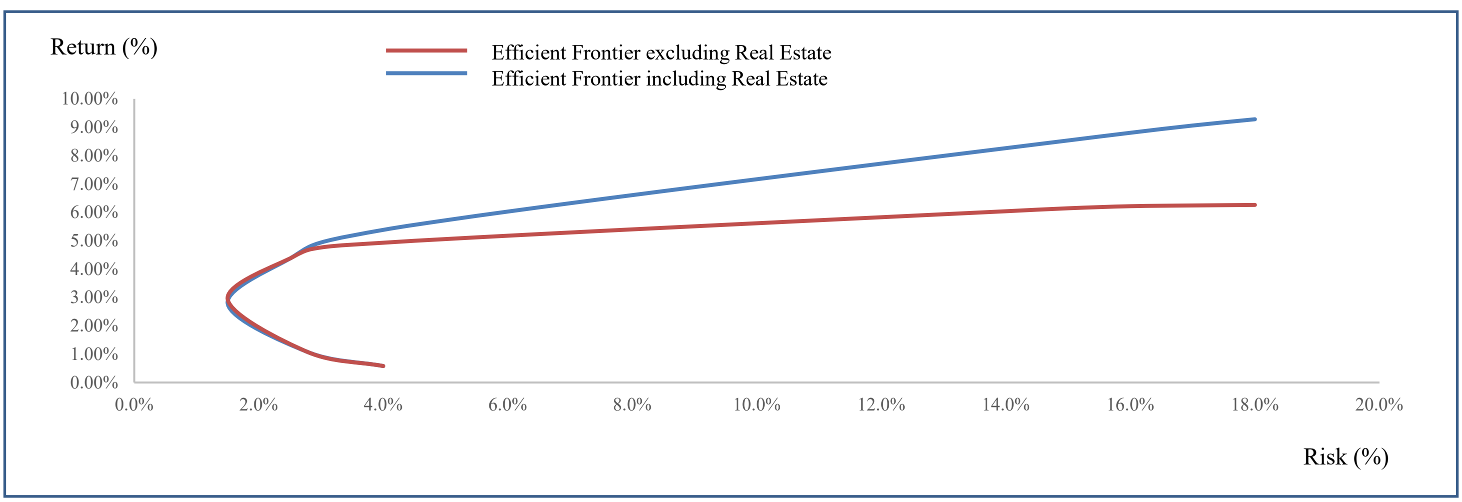
At the same time, REIT volatility has not typically been correlated with other asset classes, enhancing potential portfolio diversification. Multiple factors such as rise of market rates with building value and adjustment of leases with CPI as a part of lease provision makes real estate positively correlated with inflation and therefore provide a good inflation hedge. REITs offer an alluring alternative to investors who aren't interest in direct ownership of real estate and deal with problems like illiquidity, large capital requirement and legal complications. Despite these potential benefits, many investors have been slow to include real estate in their portfolios.

Below we detail the potential effect of incorporating real estate into a diversified portfolio, evaluate the optimal level of real estate exposure based on an investor's risk tolerance, and discuss how well-known public investors allocate into real estate

Modern Portfolio Theory and Real Estate

Modern Portfolio Theory states that when investors allocate to asset classes that move independently of each other, overall risk can be reduced. In order to quantify the potential risk-return benefits of incorporating real estate, we ran a mean-variance optimization that looked at the twenty-year performance (1999-2018) of widely held asset classes.[2] The results demonstrate that an allocation to real estate, combined with a mix of other asset classes, can raise a portfolio's returns and lower its volatility (Exhibit 1).

Exhibit 1
Efficient Frontier Analysis: The Effect of Including Real Estate in a Diversified Portfolio



As of December 31, 2018
This is not intended to represent the performance of any product or strategy.
The seven asset classes are represented by the following indices: S&P 500, Russell 2000, MSCI EAFE, MSCI Emerging Markets, Bloomberg Barclays US Aggregate Bond Index, FTSE World Broad Investment-Grade Bond Index (WorldBIG®), and FTSE NAREIT All Equity REITs. Risk Free Rate is represented by LIBOR 30-day rate. [3]

Indices are unmanaged and have no fees. It is not possible to invest directly in an index.

Allocation to Real Estate

To determine the optimal level of real estate exposure, investors need to understand their tolerance for risk. In order to provide some guidance, we grouped our optimization into three levels of targeted volatility, (5%, 9%, and 13%) and labeled them as conservative, moderate, and aggressive.[4]

Exhibit 2
Portfolio Allocations – Optimization Results (1994–2013)

	Market Neutral	Conservative 5% Volatility	Moderate 9% Volatility	Aggressive 13% Volatility
Asset Class	**(%)**	**(%)**	**(%)**	**(%)**
Risk Free Rate	1.0	0.0	1.0	0.0
S&P 500	20.0	2.0	1.0	1.0
RUSSELL 2000	20.0	7.1	32.4	35.0
MSCI_EAFE	5.0	0.0	1.0	1.0
MSCI_Emer	10.0	0.0	10.3	21.2
Bloomberg US Agg	14.0	47.8	1.0	1.0
NAREIT	10.0	18.1	20.0	35.0
WORLDBIG	20.0	25.0	33.30	5.8
Expected Return (Ann)	5.19	5.60	6.2	7.25
Volatility (Ann)	8.20	5.00	9.00	13.0

Based on this, our hypothetical analysis shows that investors would have benefited from an overweight allocation to real estate versus a market-neutral portfolio. Returns for hypothetical portfolios with a higher allocation to real estate would have increased anywhere from 41 to 206 basis points (bps) as seen in Exhibit 2. Likewise, investors with an overweight to real estate would have hypothetically outperformed a market-neutral portfolio with 326 bps less volatility in the conservative portfolio or gained 94 bps of performance by taking on somewhat similar volatility

Select Third-Party Allocations

Historically, investment advisors have used a mixed approach to incorporate real estate into a client's portfolio. While the traditional method was a direct investment or partnership funds, REITs have a growing presence in the asset allocation models of institutions and well-known public investors. In 2018, according to Institutional Real Estate Inc., U.S. investors reported an average target allocation to real estate of 9.8 %, up from 8.9% in 2014. [5] Also , many well-known investors have significant REIT exposure (Exhibit 3). [6]

Exhibit 3
Select Real Estate Allocations

Organization	Allocation to RE (%)
Yale University Endowment	9.5
Arizona State Retirement System	20
Cambridge University	9

As of Oct 31st , 2018

Conclusion

The emergence of real estate in securitized form (REITs), evolution of modern financial theory and the development of more sophisticated multi-factor models has made it easier for investors to decide on the suitability and allocation of real estate as an alternative investment in their portfolios. Therefore, as the number and size of REITs in the United States continue to grow and the list of countries adopting REIT or REIT-like structure expands, we believe investors should consider how (not if) to incorporate real estate into their portfolios.

For more information, please contact the Real Income portfolio management team.

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References

1. Source: Bloomberg

2. The optimization was based on historical returns from 1999 to 2018. Large cap, small cap, international, and emerging-market equities were represented by the S&P 500, Russell 2000, MSCI EAFE, and MSCI EM indices respectively. Domestic and global bonds were represented by the Bloomberg Barclays US Aggregate and FTSE World Broad Investment-Grade Bond Index (WorldBIG®). Real estate was represented by the FTSE NAREIT All Equity TR index and cash by the US 30-day LIBOR. Indices are unmanaged and have no fees. It is not possible to invest directly in an index.

3. Sources for performance of various indexes are :
   a) S&P 500 : Yahoo Finance
   b) Russell 2000 : https://www.ftserussell.com/index-series/index-tools/russell-index-performance-calculator
   c) MSCI EAFE and MSCI Emerging Markets: https://www.msci.com
   d) Bloomberg Barclays US Aggregate Bond Index : http://performance.morningstar.com/Performance/index-c/performance-return.action?t=XIUSA000MC
   e) WorldBIG® Index : https://www.yieldbook.com/m/indices/single.shtml?ticker=WBIG
   f) FTSE NAREIT All Equity REITs : https://www.reit.com/data-research/reit-indexes/real-time-index-returns/fner-ftx
   g) US LIBOR 30-day : https://www.macrotrends.net/2518/1-month-libor-rate-historical-chart

4. The market-neutral portfolio is based on the market cap of each represented asset class as a percentage of the total. The following portfolio constraints were utilized; real estate, global fixed income, emerging markets, and cash, maximum allocation of 10%, 20%, 10%, and 5% respectively. Large cap equities have a minimum of 20% allocation.

5. Source : 2018 Institutional Investors Real Estate Trends, 22nd Annual Plan Sponsor Survey.

6. Sources:
   a) Yale endowment and Arizona State Retirement System: Annual Survey Report, 2018 by Cornell University's Baker Program in Real Estate and Hodes Weill & Associates
   b) Cambridge University: "Private, public equity lead asset class returns for Harvard" by James Comtois. November 1, 2018

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