

# REIT Stocks: An Underutilized Portfolio Diversifier

## KEY TAKEAWAYS

- During the past 20 years, an allocation to REIT stocks would have boosted the risk-adjusted returns of a portfolio including U.S. stocks and investment-grade bonds.
- Despite strong performance over an extended time period, REIT stocks are generally underutilized as a portfolio diversification tool; many investors remain underexposed to the asset category.
- The contractual nature of commercial real estate leases results in recurring cash flows, which affords REITs earnings visibility and consistent dividend income—attributes that can help provide diversification benefits to multi-asset-class portfolios.
- Publicly traded REITs generally own commercial real estate, which have different investment characteristics than residential housing, and each should be viewed separately in an investment context.
- Historically, there is an imperfect correlation between REIT stock performance and interest-rate movements, though the factors driving interest-rate changes and the magnitude of changes in rates have influenced REIT stock returns.

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The stocks of real estate investment trusts (REITs) can provide diversification benefits to a portfolio, yet many investors have remained underexposed to this asset class despite its low correlation and commendable track record of performance relative to other assets (see Exhibit 10, page 10). *[Please note that diversification and asset allocation do not ensure a profit or guarantee against loss.]* The following article will outline why many investors should consider maintaining a higher exposure to commercial property through REIT stocks, particularly in multi-asset-class portfolios with longer-term, strategic objectives. In addition, we will provide an analytical perspective on some common misperceptions about REITs.

**REITs have provided diversification benefits to multi-asset-class portfolios**

Combining assets that exhibit low performance correlation can play an important role in reducing portfolio risk without

sacrificing return potential, and reflects the central focus of portfolio optimization. One asset category that historically has demonstrated an ability to provide such diversification benefits is REIT stocks. REITs own, and in most cases manage, income-producing real estate, including office buildings, apartments, shopping centers, and storage facilities. During the past 20 years, REITs have had imperfect performance correlation with the broader equity market (0.56 correlation) and very little correlation to investment-grade bonds (0.16 correlation), both typically viewed as core holdings in a diversified portfolio.<sup>1</sup> *[Note: perfect negative correlation at -1; absence of correlation at 0; perfect positive correlation at +1.]*

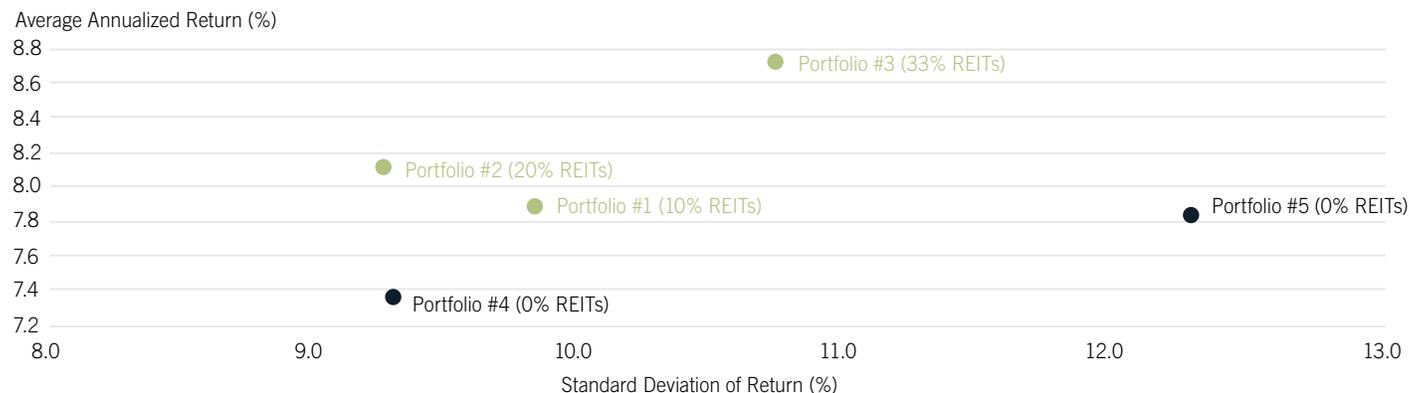
To illustrate the potential diversification benefits of including REITs in a strategic portfolio over an extended horizon, we constructed five hypothetical portfolios with varying allocations to U.S. stocks, U.S. investment-grade bonds, and REITs,

**Exhibit 1** Adding REIT stocks to a portfolio of U.S. stocks and U.S. investment-grade bonds led to improved risk-adjusted performance during the past 20 years.

Risk/Return Spectrum of Hypothetical Portfolios with REIT Exposure

Portfolio	Allocation	Sharpe Ratio
● 1	55% S&P 500 35% Barclays US Aggregate Bond 10% FTSE NAREIT Equity REITs	0.58
● 2	40% S&P 500 40% Barclays US Aggregate Bond 20% FTSE NAREIT Equity REITs	0.63
● 3	33.3% S&P 500 33.3% Barclays US Aggregate Bond 33.3% FTSE NAREIT Equity REITs	0.61

Portfolio	Allocation	Sharpe Ratio
● 4	60% S&P 500 40% Barclays US Aggregate Bond	0.55
● 5	80% S&P 500 20% Barclays US Aggregate Bond	0.48

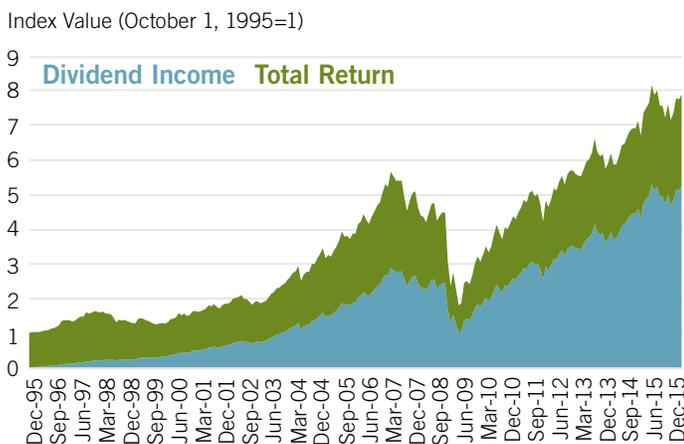


Source: Morningstar, as of Dec. 31, 2015. See endnotes for index definitions. For illustrative purposes only.

and utilized a mean-variance optimization analysis (MVO). Our overall objective was to maximize risk-adjusted returns for any given level of risk, with the standard Sharpe ratio providing a barometer of risk-adjusted performance. Of the five portfolios, the two without any exposure to REITs (portfolios #4 and #5) had the lowest Sharpe ratios over the time period, indicating relatively weaker risk-adjusted performance (see Exhibit 1). The addition of REITs in portfolio #1 (10% REITs), #2 (20% REITs), and #3 (33.3% REITs) resulted in improved risk-adjusted returns (Sharpe ratio).

Looking at all three portfolios with varying REIT exposures, portfolio #2 (40% stocks/40% bonds/20% REITs) was more efficient than portfolio #1 (55% stocks/35% bonds/10% REITs) from a mean-variance standpoint because it generated a higher return with less volatility. When evaluating portfolio #2 (20% REITs) versus #3 (33% REITs), it is important to consider risk tolerance. Although Portfolio #2 has the higher Sharpe ratio of the two, Portfolio #3 is not inefficient, because investors with a greater risk appetite may be willing to accept the potentially higher volatility in exchange for the higher expected return offered by Portfolio #3.

**Exhibit 2** Dividends have been a significant portion of REITs’ total returns over time and have provided a source of stability during equity bear markets. Dividends Represent a High Percentage of REIT Total Returns



REIT returns indexed to Jan. 1, 1996. FTSE NAREIT Equity REITs Index is shown as a proxy for REIT monthly returns. Past performance is no guarantee of future results. You can not invest directly in an index. Index performance is not meant to represent that of any Fidelity mutual fund. Source: FactSet, as of Dec. 31, 2015.

As stated earlier, the compelling influence of REITs on a portfolio’s diversification is due in large part to the imperfect performance correlation between REITs and both U.S. stocks and U.S. investment-grade bonds over this historical period.<sup>2</sup> The following characteristics of REITs help differentiate their performance from other assets:

- REITs are required to distribute at least 90% of their taxable income in the form of dividends. This dividend income has constituted nearly two-thirds of REITs’ total returns and has helped to dampen volatility during periods of equity market stress (see Exhibit 2).
- The contractual nature of commercial real estate leases and the predictability of rental income and expenses give REITs a defensive quality, allowing analysts to more accurately forecast earnings, which helps reduce share price volatility.
- Rental rates tend to rise during periods of increasing inflation, therefore REIT dividends tend to be protected from the detrimental effect of rising prices, unlike many bonds.

**Pouring a portfolio’s foundation: Many investors remain underexposed to REIT stocks**

**REIT exposures in various market indexes**

The U.S. REIT market has grown considerably in size and prominence since the advent of the modern REIT era in the early 1990s. On Oct. 1, 2001, Equity Office Properties Trust, the largest publicly traded office building owner and operator in the U.S. at the time, became the first REIT to be added to the S&P 500 Index.<sup>3</sup> That same day, REIT stocks were also added to the S&P 400 (mid-cap index) and S&P 600 (small-cap index). Since then, there has been an increased acceptance of REIT stocks as a credible investment vehicle, and REITs are set to formally become the 11th equity market sector as of Aug. 31, 2016, according to the Global Industry Classification Standard (see “Real estate set to become 11th major equity sector,” page 4).

Today, REITs are well represented within each of these major indexes—particularly the mid-cap-oriented S&P 400 and small-cap-oriented S&P 600 indexes, because the market caps of most U.S. REITs are less than \$11 billion (see Exhibit 3). Utilizing the traditional equity style box framework, which

depicts size (market cap) and style (value, blend, growth), REITs represent a progressively larger weight as the representative indexes decline in capitalization, and lean toward value (see Exhibit 3).

**Actively managed fund investors remain underweight REITs**

Despite the proliferation of REITs in major equity market indexes, many investors may be underexposed to this asset class. For example, investors who utilize actively managed U.S. equity mutual funds within their portfolios may hold suboptimal exposure to REITs. Diversified U.S. equity mutual funds, on average, are underweight REITs—and have been so for the bulk of the past decade. An analysis of the primary Morningstar U.S. equity mutual fund peer groups highlights the magnitude of this underweight in REITs. Across all nine peer groups, the average weighting for equity funds was significantly below that of the corresponding Russell index representing each category as of Dec. 31, 2015 (see Exhibit 4).

Our analysis also shows that equity fund managers on average have remained underweight REITs for the majority of the past decade. In each of Morningstar’s nine style box categories, the average equity fund has been underweight REITs relative to the respective benchmark index since January 2006 (see Exhibit 5). Looking across all market capitalizations (small, mid, and large), value-oriented equity funds have maintained the largest underexposure to REITs—and consistently more so than growth-oriented equity funds. The rel-

**Real estate set to become the 11th major equity sector**

Industry benchmark providers MSCI and S&P Dow Jones have decided to make real estate a separate equity sector in the Global Industry Classification Standard (GICS®) structure effective August 31, 2016—the first new top-level sector since GICS was created in 1999. Currently, real estate is an industry group within the financials sector. The potential implications of this change are significant for real estate equities. GICS is one of the most widely utilized sector classification structures, and substantial assets are managed in accordance with this framework. Making real estate a standalone equity sector could boost demand for this category. Historically, the inclusion of real estate within the financials sector has often been blamed for limiting the overall appeal of the group to generalist investors (non-dedicated real estate investors) who have favored other industry groups, such as banks, insurance companies, and asset managers in order to fulfil their exposure to the overall financials sector. As of the end of 2015, the actively managed U.S. equity mutual fund community was significantly underweight real estate equities across all style and market capitalizations (see Exhibit 4).<sup>5</sup> While it is unrealistic to expect this underweight to be entirely eliminated due to the GICS carve-out, it suggests that there is significant potential buying power for the group between now and the August 2016 effective date, and beyond. At a minimum, we believe that the carve-out of real estate as a standalone GICS sector could result in greater investor interest in this asset class over time among generalist investors.

**Exhibit 3** REIT stocks are well represented in major equity market indexes (left), though they tend to represent a higher exposure in mid- and smaller-cap segments, and in value-oriented indices (right).

REIT EXPOSURE IN MAJOR INDEXES (%)	
Index	Weight
S&P 500	2.71
S&P MidCap 400	10.88
S&P Small Cap 600	7.78

REIT EXPOSURE BY STYLE-BOX FRAMEWORK (%)			
	Value	Core	Growth
Large Cap	4.85	3.64	2.51
Mid Cap	15.04	9.70	4.39
Small Cap	15.29	8.92	3.06

Source: Respective Standard & Poor’s indexes, FactSet. See endnotes for index definitions. Index weightings as of Dec. 31, 2015. REIT stock weights represented by: Large Cap Value—Russell 1000 Value Index; Large Cap Core—Russell 1000 Index; Large Cap Growth—Russell 1000 Growth Index; Mid Cap Value—Russell Midcap Value Index; Mid Cap Core—Russell Midcap Index; Mid Cap Growth—Russell Midcap Growth Index; Small Cap Value—Russell 2000 Value Index; Small Cap Core—Russell 2000 Index; Small Cap Growth—Russell 2000 Growth Index. Source: Morningstar, as of Dec. 31, 2015.

atively larger underweighting in value equity funds suggests value fund managers have generally been somewhat more uncomfortable holding the higher benchmark REIT exposure accorded value benchmarks relative to growth benchmarks (which have lower REIT exposure, see Exhibit 4).

The other interesting pattern this analysis shows is that fund managers across all three market capitalizations have tended to allocate less capital to REITs over time (Exhibit 5). For example, in the large-cap universe, the average relative REIT exposure of value equity funds has declined from a –1.6 percentage point underweight in January 2006 to a –2.7 percentage point underweight in December 2015. In the small-cap universe, the average relative REIT exposure of value funds has fallen from –5.6 percentage points to –9.3 percentage points over the same period. The underweights to

REITs have also appeared to increase more significantly over the past few years across all market capitalizations and styles. In the large-cap spectrum, the average REIT underexposure of growth funds has declined from –0.4 percentage points in January 2006 to –1.3 percentage points in December 2015.

Investors who utilize passively managed equity strategies that track major indexes may have adequate exposure to REITs that can provide an optimal level of diversification. But investors who utilize actively managed equity strategies may want to take a closer look at the strategies’ underlying REIT exposure to determine whether their allocation is adequate given their own unique investment objectives.

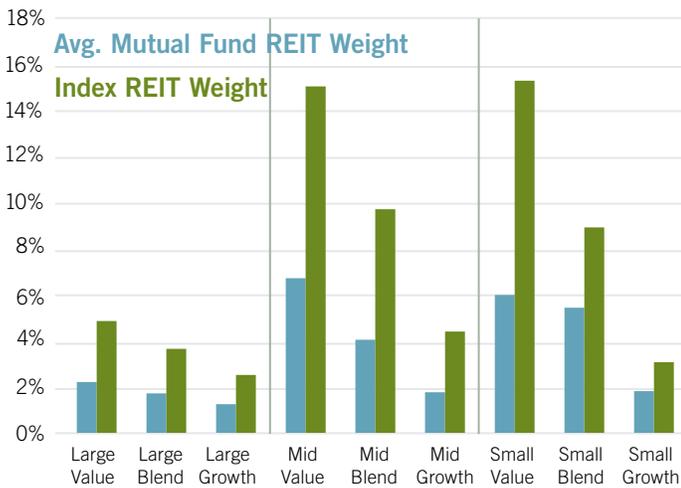
**Institutional investors have embraced REITs**

While many individual investors have been underexposed to REITs, pension plan sponsors, endowments, foundations, and other institutional investors have long embraced commercial real estate as a core asset class due to its attractive combination of investment attributes. Commercial real estate exposure can be accessed via direct investment or through both the private and publicly traded securities markets. Publicly traded REITs offer investors the primary merits of commercial property investment—diversification (via multiple regions, countries, and sectors), income (rent), and a hedge against inflation (property = real asset); plus liquidity, transparency, and low capital requirements.

Some institutions have favored publicly traded real estate securities, such as REITs, as a simple, liquid, and efficient means of gaining exposure to commercial real estate. Publicly listed securities allow institutional investors to make tactical adjustments to their strategic asset allocations, which is not possible with direct property investment, due to liquidity constraints and capital requirements. U.S. public pension plans, in particular, have embraced listed real estate securities. Of the largest U.S. public pension plans with assets in excess of \$50 billion, 66% hold some level of publicly listed real estate exposure (see Exhibit 6). A 2012 study of 145 public pension funds in the U.S. found that plans in the \$500 million–\$1 billion range held an average allocation to REITs of 2.4%.<sup>4</sup> Notable examples included the \$12.8 billion Idaho Public Employees Retirement System, which targets an 8% allocation to commercial real estate and utilizes publicly traded REITs for nearly half of that exposure (\$491 million);<sup>6</sup> and

**Exhibit 4** On average, U.S. equity mutual funds in all nine style box categories tracked by Morningstar maintain a lower exposure to REITs relative to respective benchmark indexes.

U.S. Equity Mutual Funds Are Underweight REITs



*Index weightings represented by: Large Cap Value—Russell 1000 Value Index; Large Cap Blend—Russell 1000 Index; Large Cap Growth—Russell 1000 Growth Index; Mid Cap Value—Russell Midcap Value Index; Mid Cap Blend—Russell Midcap Index; Mid Cap Growth—Russell Midcap Growth Index; Small Cap Value—Russell 2000 Value Index; Small Cap Blend—Russell 2000 Index; Small Cap Growth—Russell 2000 Growth Index. Average fund REIT weights are simple averages of the percentage of total assets invested in REIT securities for all equity funds categorized within the nine Morningstar U.S. equity fund categories that have reported holdings. All data Morningstar, as of Dec. 31, 2015.*

the \$49 billion Massachusetts Pension Reserves Investment Trust Fund, which held \$1.2 billion in publicly traded REITs, or 2.4% of total fund assets.<sup>7</sup>

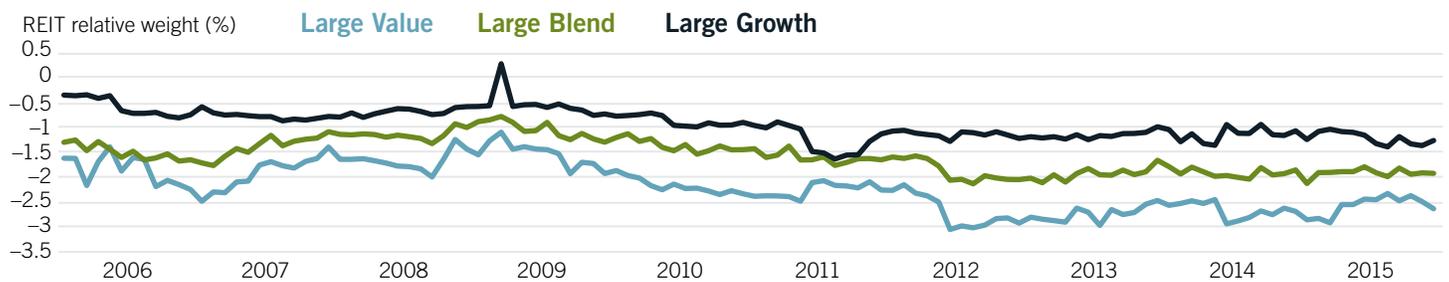
**Reasons for investors' lack of REIT exposure**

It is difficult to determine exactly why diversified U.S. equity mutual funds on average have been perennially underweight REITs. Some of the most commonly speculated reasons,

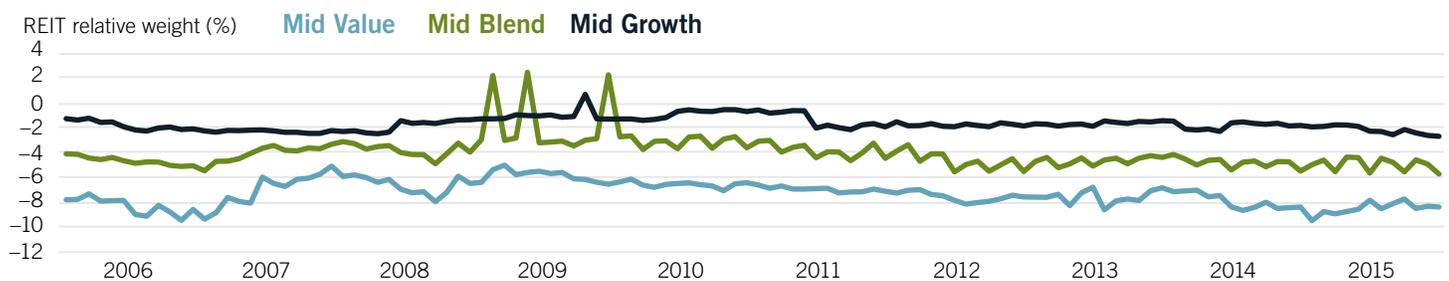
which are debatable, include a general lack of understanding among diversified U.S. equity portfolio managers of how to value REITs given their unique structure, a lack of research depth devoted to REITs within many investment organizations, and concerns about liquidity given the smaller market cap of the asset class relative to the broader equity market.

**Exhibit 5** Across market capitalizations and styles, U.S. equity funds have been underweight REITs for the bulk of their existence in major equity market indexes, and the underweight to REITs generally has accelerated in recent years.

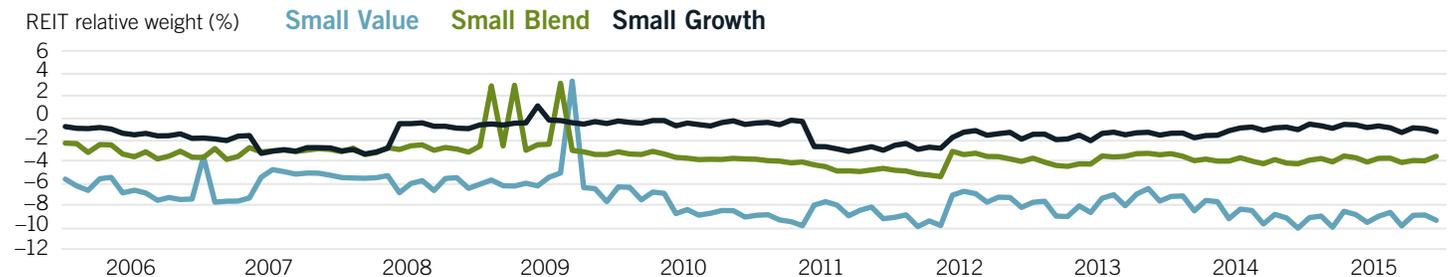
Large-Cap Fund REIT Exposure vs. Benchmark Indexes (Jan. 2006–Dec. 2015)



Mid-Cap Fund REIT Exposure vs. Benchmark Indexes (Jan. 2006–Dec. 2015)



Small-Cap Fund REIT Exposure vs. Benchmark Indexes (Jan. 2006–Dec. 2015)



Relative weight % = percentage points. Average fund REIT weights are simple averages of the percentage of total assets invested in REIT securities for all equity funds categorized within the nine primary Morningstar U.S. equity fund categories that have reported holdings. Index weightings represented by: Russell Midcap Value Index; Russell Midcap Index; Russell Midcap Growth Index; Russell 1000 Value Index; Russell 1000 Index; Russell 1000 Growth Index; Russell 2000 Value Index; Russell 2000 Index; Russell 2000 Growth Index. Average fund weightings calculated using Morningstar data, as of Dec. 31, 2015.

[Note: Illiquidity is an inherent risk associated with investing in real estate and REITs. There is no guarantee the issuer of a REIT will maintain the secondary market for its shares and redemptions may be at a price which is more or less than the original price paid. Changes in real estate values or economic downturns can have a significant negative effect on issuers in the real estate industry.]

Further exacerbating this general underexposure are some investor misperceptions about REITs that may factor into portfolio decision making. Let's take a closer look at a couple of these misperceptions.

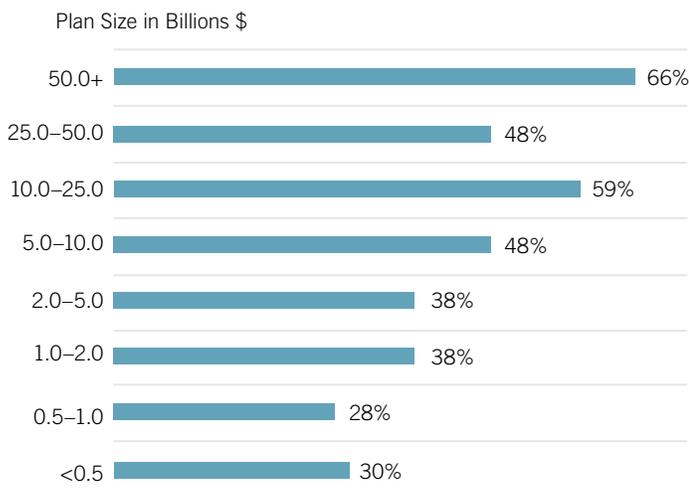
**Many investors own a home, which they believe provides adequate exposure to real estate.** In reality, single-family homeownership is quite different from commercial real estate investment. Consider:

- A residential home is primarily a need-based consumption good and, for many people, not purchased as an investment—particularly when it is financed with a mortgage. A residential home does not generate income,

but rather requires regular mortgage interest, real estate tax, and insurance payments, plus other occasional expenditures, to be properly maintained. By contrast, commercial real estate generates continual rental income.

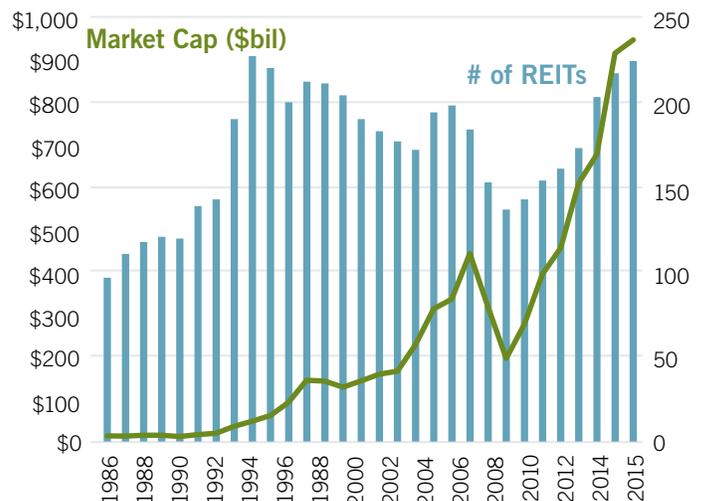
- Furthermore, securities issued by companies that own and operate commercial real estate, such as REITs, represent a diversified investment with exposure to a range of properties in a variety of geographic locations. By comparison, a home's investment risk is not diversified; rather, it is highly concentrated in a single location.
- People primarily own homes for four reasons: the need for shelter; personal reasons such as family, neighborhoods, and schools; mortgage interest tax deductibility; and as an investment. On the other hand, commercial real estate ownership is generally undertaken by investors in pursuit of stable and reliable income, inflation protection, and diversification.
- Unlike single-family residential property, direct ownership of commercial property is unrealistic for most individuals

**Exhibit 6** A significant percentage of large U.S. public pension funds maintain exposure to publicly traded REITs. Proportion of U.S. Public Pension Funds with U.S. REIT Stock Exposure



Data shown is on an asset-weighted basis. Source: Preqin Real Estate OnLine, National Association of Real Estate Investment Trusts (NAREIT) calculations, as of Jan. 31, 2016.

**Exhibit 7** The size of the publicly traded REIT universe has grown considerably during the past decade. Size of the U.S. Public REIT Universe



National Association of Real Estate Investment Trusts (NAREIT), as of Dec. 31, 2015. Bars shown represent total number of publicly traded U.S. REITs.

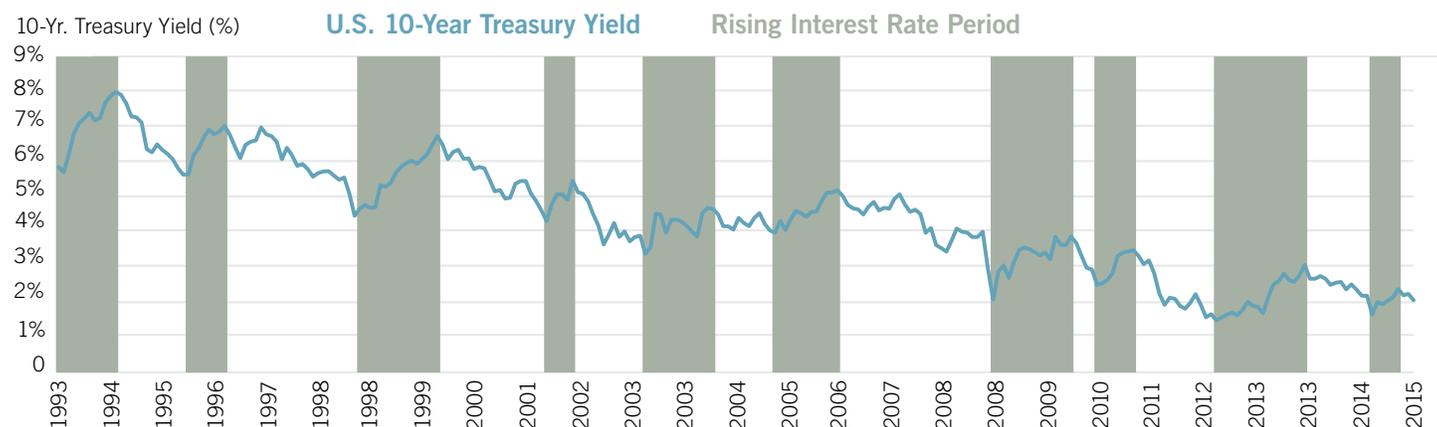
due to high capital requirements. REIT stocks can be an ideal way for individual investors to get exposure to the commercial real estate asset class. The REIT vehicle was created by U.S. Congress in 1960 to give all Americans—not just the affluent—the opportunity to invest in income-producing real estate. REITs represent a diverse mix of property sectors, such as office, retail, industrial and health care, to name a few. This mix of property sectors has expanded recently owing to a wave of REIT conversions by cell tower owners, billboard owners, prison operators, data centers, and others. Today, there are about 225 U.S. public REITs with a total equity market capitalization in excess of \$930 billion (Exhibit 7).

**REITs are sensitive to interest-rate movements.** With historically low government policy rates and investment-grade bond yields near historically low levels due in large part to unprecedented levels of central bank activity in recent years, some investors may be concerned about a potential rise in interest rates and the impact it could have on REITs.

In reality, the performance of REITs historically has demonstrated surprisingly minimal sensitivity to changes in interest rates. This is contrary to the widely held belief that because real estate is a capital-intensive business, the equation of higher interest rates resulting in higher borrowing costs serves as a headwind to commercial property owners. While there is some validity to this point, broadly speaking, there

**Exhibit 8** REIT stock performance has been fairly inconsistent during previous periods of rising interest rates.

REIT Stock Performance During Periods of Rising Interest Rates



	PERIOD													
	1	2	3	4	5	6	7	8	9	10	Median	Average	High	Low
Equity REITs	-4%	12%	-7%	14%	38%	25%	64%	18%	5%	-6%	13%	16%	64%	-7%
S&P 500 Index	0%	7%	39%	11%	27%	9%	35%	22%	40%	1%	17%	19%	40%	0%
REITs vs. S&P 500	-4%	4%	-47%	3%	11%	16%	29%	-4%	-35%	-7%	-1%	-3%	29%	-47%
Interest-rate increase (bps)	211	136	205	114	109	120	178	97	157	71	128	140	211	71
# of Months	11	7	15	5	13	12	15	7	17	5	12	11	17	5
Avg. monthly increase (bps)	19	19	14	23	8	10	12	14	9	14	14	14	23	8

Chart depicts 10 separate periods when the 10-year U.S. Treasury yield increased by at least 50 basis points over a duration of at least five months between Dec. 31, 1993 and Dec. 31, 2015. Equity REITs: FTSE NAREIT Equity REIT Index. Bps: basis points. Past performance is no guarantee of future results. You can not invest directly in an index. Index performance is not meant to represent that of any Fidelity mutual fund. Source: FactSet, NAREIT, and Fidelity Investments, as of Dec. 31, 2015.

are other factors at play that serve to offset the negative effects of increased capital costs. Gradually rising interest rates generally portend an improving economic backdrop, which is supportive of REIT cash flows due to strengthening demand for commercial real estate and an increased ability for landlords to increase rental rates to adapt to improving conditions. Furthermore, easing commercial lending standards and improved access to credit for private players has historically offered support during rising-rate environments.

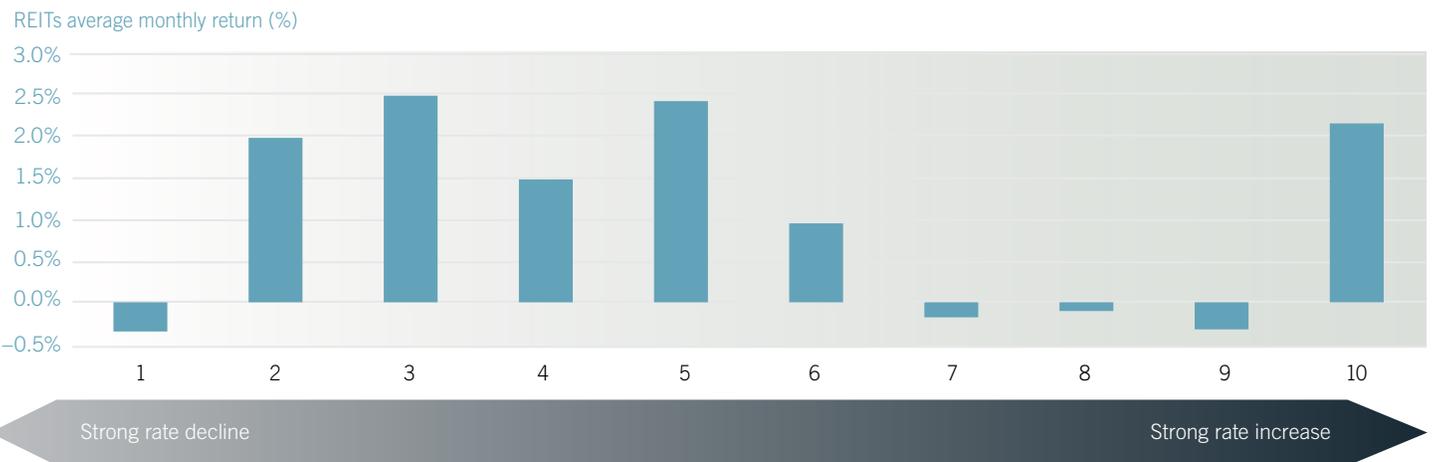
More specifically, there appears to be little consistency in terms of REIT performance during periods of rising or declining interest rates, respectively. Throughout 10 periods of rising interest rates in the modern REIT era (1993-2015), REIT stocks as a group have generated positive absolute returns in seven of these periods, and have outperformed broad equities as measured by the S&P 500 in five periods (see Exhibit

8). This ambiguous outcome is a result of the “tug of war” that typically occurs across REIT property sectors during rising-rate environments. More economically sensitive and shorter-lease property sectors, such as hotels, apartments, and self storage facilities can more easily raise rental rates in stronger, inflationary environments—a tailwind for these sectors. For their part, mall REITs have also fared well during periods of rising interest rates as an improving economic backdrop has tended to buoy more discretionary sectors.

On the flip side, strip mall shopping centers have tended to underperform during rising interest-rate periods as tenants are generally more value-oriented, and their customers have shown a propensity to “trade up” during periods of economic strength. Furthermore, the health care REIT sector, which includes senior living facilities that tend to have longer-term contractual leases, has more bond-like characteristics and

**Exhibit 9** Even when evaluated based on the magnitude of interest-rate movements, the performance of REIT stocks has been inconsistent during periods of rising interest rates.

Influence of Interest-Rate Increases on REIT Stock Performance by Magnitude of Rate Change



NUMBER OF POSITIVE AND NEGATIVE MONTHS FOR REIT PERFORMANCE										
Category	1	2	3	4	5	6	7	8	9	10
# of up months	16	21	20	17	19	18	13	15	14	19
# of down months	12	7	7	11	8	10	14	13	13	9

Monthly changes in the 10-year U.S. Treasury yield over the period from January 1993 to December 2015 are categorized by magnitude of change as a percentage of the beginning value. Category 10 (darker shading) consists of months when interest rates experienced their biggest percentage increases, while Category 1 (lighter shading) consists of months when interest rates experienced their biggest percentage decreases over the period. Source: FactSet, NAREIT, as of Dec. 31, 2015.

thus exhibits greater interest-rate sensitivity. However, it's important to note that REITs are not static yield investments such as bonds, as REITs offer the potential for growth—a key distinction. Thus, the varied supply/demand dynamics and lease durations found across commercial property sectors is one explanation for the overall inconsistent sensitivity of broad REIT stock performance to interest-rate changes.

An analysis of the magnitude of previous interest rates moves also shows that there has been inconsistent performance by REITs. For example, during months when the 10-year U.S. Treasury bond yield experienced its biggest increases since 1993, REITs generated an average monthly return of 2.1% (see Exhibit 9, Category 10). This result is inconsistent with the aforementioned theory that rising interest rates are a headwind to REIT performance. However, REITs also generated negative returns in other months when rates increased significantly (Categories 7-9)—muddying the conclusion. In

addition, REIT returns were higher during months featuring larger rate decreases (Categories 2-5) as might be expected, but declined during the months featuring the strongest declines (Category 1). This analysis suggests that there are other factors at play that may better explain REIT stock returns at any given time, such as the macroeconomic backdrop, fundamentals, valuation, and technical conditions.

### Investment implications

As this analysis shows, making a sizable allocation to REITs in a multi-asset-class portfolio would have helped improve the portfolio's risk-adjusted return over time. However, many investors remain underexposed to this asset category based on an analysis of U.S. equity funds. Investors with capital earmarked for strategic investment over an extended horizon may want to reevaluate their portfolio exposure to consider whether dedicated REIT exposure is warranted in the context of achieving their investment objectives.

**Exhibit 10** REITs have fared well relative to other asset categories, particularly over longer time periods.

Name	1 Year	3 Years	5 Years	10 Years	20 Years	25 Years
FTSE NAREIT Equity REITs TR USD	3.20	11.23	11.96	7.41	10.90	12.13
S&P 500 TR USD	1.38	15.13	12.57	7.31	8.19	9.82
Russell 2000 TR USD	-4.41	11.65	9.19	6.80	8.03	10.50
DJ Global TR USD	-1.88	8.13	6.33	5.15	6.42	N/A
Barclays US Agg Bond TR USD	0.55	1.44	3.25	4.51	5.34	6.15
BofAML US HY Master II TR USD	-4.64	1.64	4.84	6.81	6.69	8.83
S&P GSCI Gold TR	-10.88	-14.51	-6.19	6.56	4.96	3.95

*U.S. REITs: FTSE NAREIT Equity REIT Index—The unmanaged National Association of Real Estate Investment Trusts (NAREIT) Equity Index is a market-value-weighted index based on the last closing price of the month for tax-qualified REITs listed on the NYSE. U.S. Equities: S&P 500®—A market-capitalization-weighted index of common stocks, is a registered service mark of The McGraw-Hill Companies, Inc., and has been licensed for use by Fidelity Distributors Corporation and its affiliates. Global Equities: The Dow Jones Global Index®—A broad yet investable measure of the global stock market. It targets 95% coverage of markets open to foreign investment. Gold: S&P GSCI Commodities Index—A world-production-weighted index composed of 24 widely traded commodities. S&P GSCI Gold TR Index is a subset index representing gold stocks. All sub-indices of the S&P GSCI™ sub-indices (Energy, Industrial Metals, Precious Metals, and Agriculture and Livestock) follow the same rules regarding world production weights, methodology for rolling, and other functional characteristics. U.S. High Yield Bonds: BofA ML High Yield Bond Master II Index—An unmanaged index that tracks the performance of below-investment-grade, U.S. dollar-denominated corporate bonds publicly issued in the U.S. domestic market. Small-Cap U.S. Equities: Russell 2000® Index—A market-capitalization-weighted index of smaller company stocks. Investment-Grade Bonds: Barclays U.S. Aggregate Bond Index—An unmanaged, market-value-weighted performance benchmark for investment-grade fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities with maturities of at least one year. All data as of Dec. 31, 2015. Source: Morningstar. Past performance is no guarantee of future results.*

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**Past performance is no guarantee of future results. It is inherently difficult to make accurate dividend growth forecasts and the outcomes from those forecasts are not guaranteed.**

All indices are unmanaged, and the performance of the indices includes the reinvestment of dividends and interest income, and is not illustrative of any particular investment. An investment cannot be made in an index.

Hypothetical back-tested data has inherent limitations due to the retroactive application of a model designed with the benefit of hindsight and may not reflect the effect that any material market or economic factors may have had on the use of the model during the time periods shown. Thus, hypothetical performance is speculative and of extremely limited use to any investor and should not be relied upon in any way. Hypothetical performance of the model is no guarantee of future results.

Diversification/asset allocation does not ensure a profit or guarantee against loss.

Investing involves risk, including risk of loss.

Stock markets, especially non-U.S. markets, are volatile and can decline significantly in response to adverse issuer, political, regulatory, market, or economic developments. Foreign securities are subject to interest-rate, currency-exchange-rate, economic, and political risks, all of which are magnified in emerging markets.

In general the bond market is volatile, and fixed income securities carry interest-rate risk. (As interest rates rise, bond prices usually fall, and vice versa. This effect is usually more pronounced for longer-term securities.)

Fixed income securities also carry inflation risk, liquidity risk, call risk, and credit and default risks for both issuers and counterparties. Any fixed income security sold or redeemed prior to maturity may be subject to loss.

Mean variance optimization: The mean-variance portfolio optimization is a single-period theory developed by Harry Markowitz (1952, 1959) on the choice of portfolio weights that provide an optimal trade-off between the mean and the variance of the portfolio return for a future period.

Sharpe ratio: a measure of risk-adjusted performance calculated by subtracting a risk-free rate, such as that of the 10-year U.S. Treasury bond, from the rate of return for a portfolio, and dividing the result by the standard deviation of the portfolio returns.

Standard deviation: shows how much variation there is from the average (mean or expected value). A low standard deviation indicates that the data points tend to be very close to the mean, whereas a high standard deviation indicates that the data points are spread out over a large range of values. A higher standard deviation represents greater relative risk.

**Endnotes**

<sup>1</sup> Correlation calculations based on monthly returns from August 1993 through December 2015. REIT returns: FTSE NAREIT Equity REIT Index. Equity returns: S&P 500 Index. Investment-grade bond returns: Barclays

Aggregate Bond Index. Source: FactSet, Fidelity Investments, as of Dec. 31, 2015.

<sup>2</sup> Performance correlations between REITs have increased during the past 10 years. Over shorter time periods, performance, correlations, and volatility for any asset class can vary from long-term averages.

<sup>3</sup> Source: Standard & Poor's.

<sup>4</sup> Source: Greenwich Associates: "Institutional Investors Market Trends," 2012.

<sup>5</sup> Recent data from Morningstar shows that actively managed U.S. equity mutual funds across all market capitalizations (large-, mid-, and small-cap) and styles (growth, value and blend) owned \$58 billion of real estate equities vs. an allocation of \$177 billion for the nine respective Russell indexes reflecting style and market capitalization. Source: Morningstar, as of Dec. 31, 2015.

<sup>6</sup> Source: PERSI Investment Report, FY 2013, as of Jun. 30, 2013.

<sup>7</sup> Source: Massachusetts Pension Reserves Investment Trust Fund Board Annual Report, 2012.

**Index definitions**

S&P 500<sup>®</sup> Index, a market-capitalization-weighted index of common stocks, is a registered service mark of The McGraw-Hill Companies, Inc., and has been licensed for use by Fidelity Distributors Corporation.

FTSE NAREIT Equity REIT Index—The unmanaged National Association of Real Estate Investment Trusts (NAREIT) Equity Index is a market-value-weighted index based on the last closing price of the month for tax-qualified REITs listed on the NYSE. Prior to March 6, 2006, the FTSE NAREIT Equity REIT Index was known as the NAREIT Equity REITs Index

U.S. Aggregate Bond Index—An unmanaged, market-value-weighted performance benchmark for investment-grade fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities with maturities of at least one year.

Russell 2000<sup>®</sup> Index is a market capitalization-weighted index designed to measure the performance of the small-cap segment of the U.S. equity market. It includes approximately 2,000 of the smallest securities in the Russell 3000<sup>®</sup> Index. The Russell 2000<sup>®</sup> Growth Index is a market capitalization-weighted index designed to measure the performance of growth stocks in the small-cap segment of the U.S. equity market. The Russell 2000<sup>®</sup> Value Growth Index is a market capitalization-weighted index designed to measure the performance of value stocks in the small-cap segment of the U.S. equity market. Russell Midcap<sup>®</sup> Index is a market capitalization-weighted index designed to measure the performance of the mid-cap segment of the U.S. equity market. It contains approximately 800 of the smallest securities in the Russell 1000<sup>®</sup> Index. Russell Midcap<sup>®</sup> Growth Index is a market capitalization-weighted index designed to measure the performance of growth stocks in the mid-cap segment of the U.S. equity market. Russell Midcap<sup>®</sup> Value Index is a market capitalization-weighted index designed to measure the performance of value stocks in the mid-cap segment of the U.S. equity market. Russell 1000<sup>®</sup> Index is a market-capitalization weighted equity index of the 1,000 largest firms in the Russell 3000<sup>®</sup> Index. Russell 1000<sup>®</sup> Value Index is a market-capitalization weighted equity index of the value stocks among the 1,000 largest firms in the Russell 3000<sup>®</sup> Index. Russell 1000<sup>®</sup> Growth Index is a market-capitalization weighted equity index of the growth stocks among the 1,000 largest firms in the Russell 3000<sup>®</sup> Index.

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