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QIS Insights

Quality in the Selection of REITs

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- Quality real estate has historically offered an attractive return, but that return sits behind high barriers to entry. Physical property is costly to own and illiquid to trade. Publicly listed real estate investment trusts (REITs) were conceived as a means for shareholders to own property in a more divisible and tradable way. Over time, REIT shares have grown into a more than trillion dollar market.

- Historically, REIT shares have tracked long term real estate returns while also outperforming the stock market. They have combined bond-like regular payouts with the capital appreciation aspects of ordinary stocks. As such, they offer a long-term diversification benefit versus other traditional asset classes.

- However, REIT investing comes with two specific risk characteristics. One: an asymmetric risk profile, i.e. stable revenue and an absence of windfall profit possibilities limit the reward for taking incremental risk. Two: a high debt burden relative to companies in other sectors.

- In this paper, we investigate quality-based characteristics that can improve the risk-return profile of REIT investing. Specifically, we study portfolios of REITs formed based on four characteristics: profitability, leverage, valuation and yield. We find that a portfolio that removes low quality REITs has historically outperformed the broad REIT benchmark.

- We highlight an approach of using these four characteristics to build a broad, statistically robust REIT portfolio, with each characteristic being additive to the REIT selection process. Importantly, the approach is based on fundamental real estate investment principles.

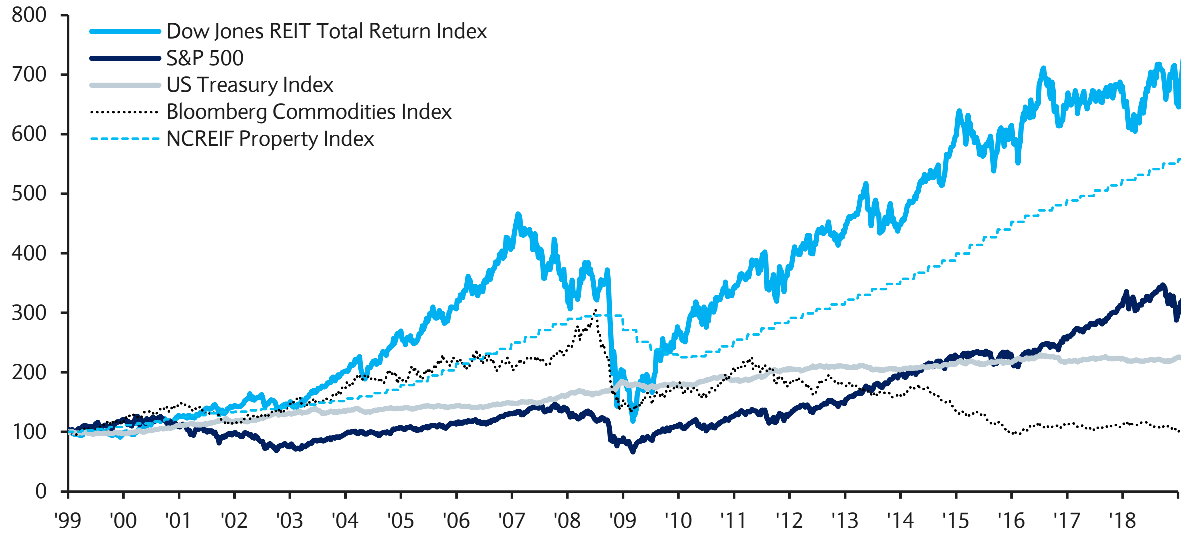
Listed Real Estate as a Unique Asset Class

Real estate owners can benefit from two unchanging laws of modern life: the scarcity of space and the priority of rents. The best places to locate a business or residence are always relatively rare and the rent that must be paid to do so is among the most senior of financial obligations. Quality real estate has given owners an attractive return but unfortunately physical property ownership is also costly, management-intensive, illiquid, and only diversifiable in large size.

Publicly listed real estate investment trusts (REITs) were conceived as a way for investors to own real estate in a more divisible and tradable way while letting professional managers handle day-to-day operations. Their shares have performed well in aggregate (Figure 1). Despite a few recent weak years, REITs have outperformed the stock market over the long-term. As a result, the REIT sector has grown to about 200 listed stocks and $1.1 trillion dollars in aggregate market capitalization according to Bloomberg.

REITs have investment characteristics akin to a hybrid of stocks, bonds and commodities. Regulation stipulates that REITs pay out at least 90% of their taxable income as dividends each year, resulting in a significant recurring distribution to shareholders much like the recurring income that accrues to the owners of bonds. The yield on REITs is substantial: over the past ten years, the yield spread on REITs over investment grade bonds has averaged 0.5%-1.5% per annum. Unlike bond coupons however, REIT distributions can grow with rental income, making them a potential inflation hedge, similar in this respect to commodities as an asset class. Indeed, because the supply of well-located real estate assets is limited, rental rates historically have grown near or above the rate of inflation.

Figure 1: REIT index versus broad investment asset classes, January 1999 – December 2018



Source: Bloomberg

Table 1: Descriptive statistics by asset class, 20 years through December 2018

	Annualized Total Return	Annualized Volatility	Sharpe Ratio	Correlation to S&P 500	Long-term Correlation to REITs**	Max Drawdown
REITs	**9.8%**	**24%**	**0.3**	**62%**	**n/a**	**-75%**
All S&P 500	5.6%	17%	0.2	n/a	56%	-55%
US Treasuries	4.1%	4%	0.4	-31%	-31%	-7%
Commodities (BCOM)	0.0%	16%	-0.1	29%	45%	-69%
NCREIF Property[1]	8.9%	n/a	n/a	17%*	66%	-24%

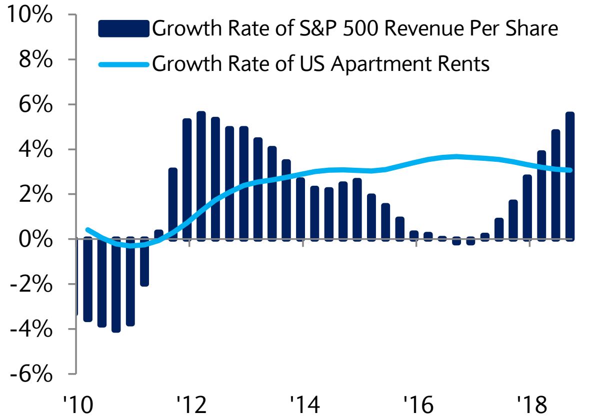
Source: Bloomberg, Barclays. * Based on quarterly observations. **Based on annual observations.

[1] The property fund index levels are reported with a 12 month lag, as such, the correlation calculations adjust for this by lagging the returns by 12 months relative to the other asset returns.

Figure 1 compares the performance of various broad asset class indices with the Dow Jones REIT index and NCREIF physical property index. REITs are commonly regarded as stock-like, providing a similar Sharpe ratio to the broad stock market and a historical correlation of weekly returns around 60% (Table 1). As such, REITs are exposed to equity beta in the short run. In the longer run, however, REITs behave more like real estate and manifest a diversification benefit. The benefit results from basic REIT fundamentals: lease contracts tend to be at least one year (if not far longer), and as such rents exhibit less volatility than other economic variables, as shown in Figure 2 for the growth rate in the revenue of S&P 500 companies versus US rents.

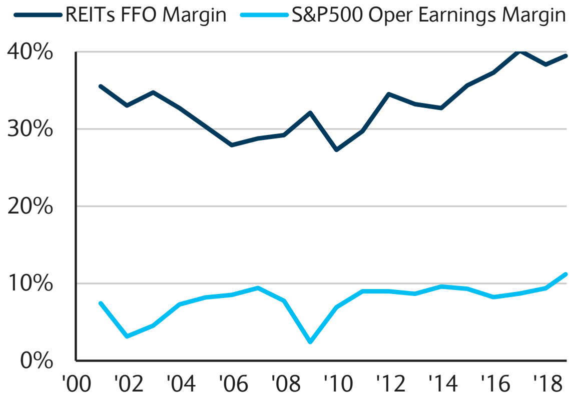
REITs are also tax-advantaged relative to other corporations. In exchange for distributing 90% of their taxable income as dividends, the REIT designation means that REITs are not subject to corporate taxes. As a result REITs have structurally higher margins than many other listed businesses (Figure 3) and thus a REIT tends to deliver shareholders a higher return than the same business not organized as a REIT. Even the distributions themselves may be tax-advantaged under certain circumstances.[2] The nature of the underlying assets, the tax efficiency of the REIT structure, and the priority of dividends are all factors in making REITs the highest performing industry group in the US stock market over the past 20 years (Table 2).

Figure 2: REIT and S&P 500 margins



Source: Barclays

Figure 3: Growth of rents versus S&P500 revenue



Source: Rents from Bloomberg, revenue from Haver

Table 2: Comparative US equity sector performance, 20 years through December 2018

	Annualized Total Return	Share of Return Attributable to Dividend	Annualized Volatility	Sharpe Ratio	Correlation to S&P 500	Max Drawdown
REITs*	**9.8%**	**54%**	**24%**	**0.3**	**62%**	**-75%**
Consumer Discretionary	7.4%	19%	21%	0.2	92%	-59%
Materials	6.9%	34%	23%	0.2	78%	-61%
Healthcare	6.8%	26%	17%	0.3	73%	-39%
Energy	6.7%	36%	23%	0.2	68%	-52%
Industrials	6.5%	33%	20%	0.2	91%	-63%
Utilities	6.5%	61%	18%	0.2	54%	-59%
Consumer Staples	6.4%	41%	14%	0.3	66%	-38%
S&P 500	**5.6%**	**35%**	**17%**	0.2	**n/a**	**-55%**
Information Tech	5.4%	18%	26%	0.1	82%	-82%
Financials	3.3%	65%	28%	0.0	85%	-83%
Telecommunication	0.6%	100%[3]	20%	-0.1	67%	-75%

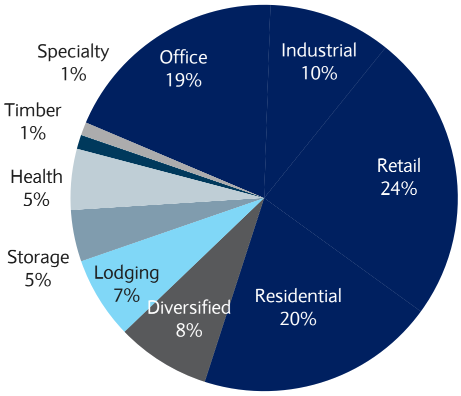
Source: Barclays, Bloomberg.* Based on Dow Jones REIT Index.

[2] Not all REIT distributions have historically been taxable as ordinary income, and further deductions may apply in some cases. For example, the 2017 tax reform bill contains certain deductions on pass-through income. Tax considerations should, however, be considered with the advice of appropriate counsel.

[3] This value is an artefact of the sector's poor price performance over the period.

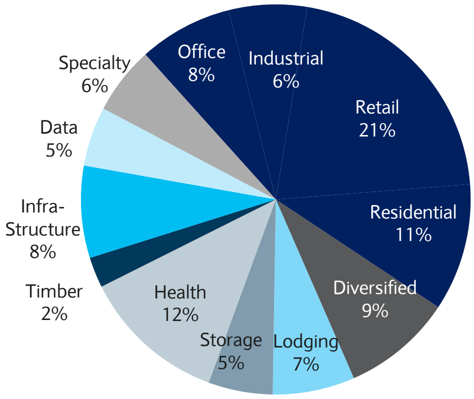
REIT and institutional real estate holdings were historically confined to four basic property types, still referred to today as "core." This is no longer the case. As late as 2000, three quarters of the dividend income produced by US equity REITs came from either office, industrial, retail (malls and shopping centers) or residential (apartment) property. Today, only about half of REIT dividends are paid out from these property types, as shown in Figures 4 and 5.

Figure 4: Distribution of REIT dividends paid by property type during 2000



Source: NCREIF

Figure 5: Current distribution of REIT dividends paid by property type



Source: NCREIF. 12 months through Sept 2018

This evolution reflects the evolution of American society and business. Exponential growth in the collection and use of digital information necessitates the building of data centers and wireless communications infrastructure. An aging population and the consolidation of medical providers have resulted in the need for the professional management of medical facilities. Global supply chains, just-in-time business inventory practices and internet retailing demand construction of new storage capacity and logistics facilities. As new types of real estate have become available, REITs have likewise evolved.

The REIT investment record is not, however, without blemishes. Risks of REIT investment include the following:

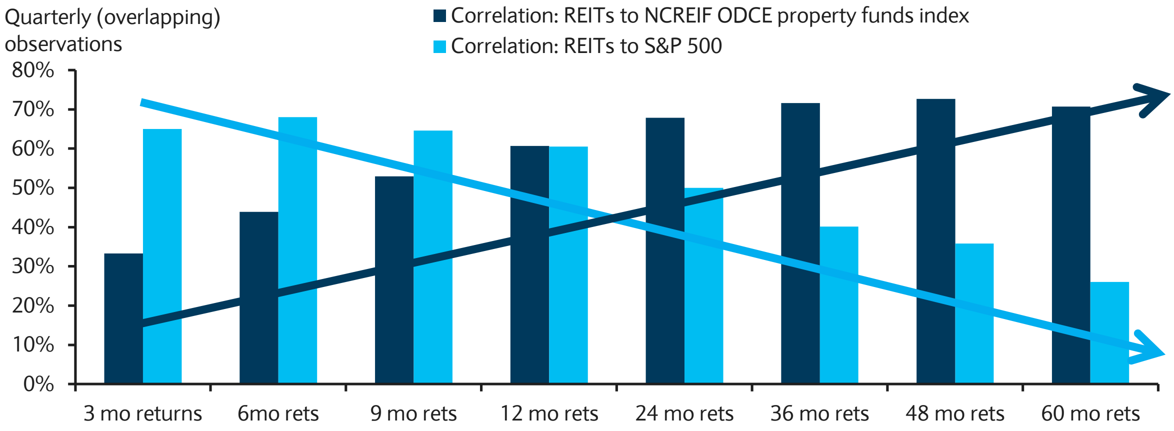
- Short term volatility: REIT equities have historically exhibited high price volatility and a significant covariance with the broader stock market (Table 2). At first look this may appear unappealing to an investor who wants real estate exposure, not a stock market proxy. Importantly, though, this volatility and covariance should be seen only as short term risks. Over a time horizon beyond 12 months REIT returns have mirrored the returns on physical real estate while their correlation to the stock market has dropped off (Figure 6 below). For investors who more typically make direct, illiquid real estate investments, REITs could be considered an equivalent and possibly better alternative over a sufficiently long time horizon.

- Risk asymmetry: In contrast to many other listed businesses, relatively stable revenue and an absence of windfall profit possibilities limit the rewards for taking unnecessary risk. While it is possible a tenant might default on his rent, for example, there is no upside scenario where he will voluntarily pay extra.

- Leverage: on average REITs carry a larger debt burden than the S&P 500 according to their public filings. This can increase stock price volatility and increase the risk of dilutive equity issuance in times of economic stress. While most REITs are regarded as conservatively managed and owning high quality assets, those that are not have been a drag on aggregate sector returns over time. Figure 7 shows that a portfolio of highly leveraged REITs consistently underperformed other REITs in a broad sector price decline.[4] Excessive debt and other easily avoidable management errors in a handful of names have at times put off prospective investors in the whole sector.

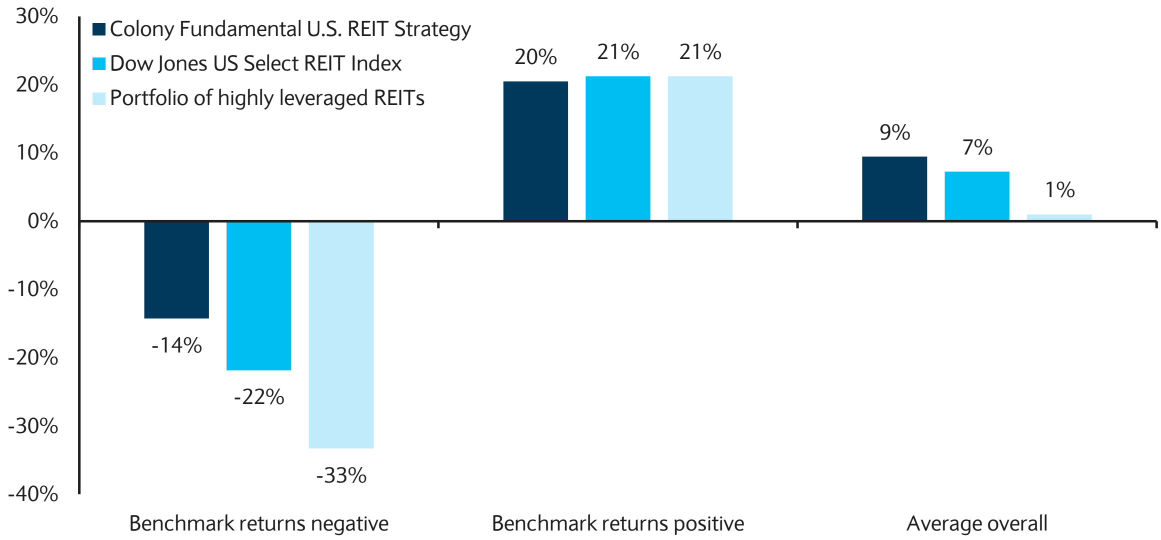
[4] The specific methodology for this portfolio is described in subsequent sections.

Figure 6: Correlation term structure of REITs to equities and physical property, 2000 – 2018[5]



Source: NCREIF, Bloomberg

Figure 7: Conditional average returns based on all 12 month periods, January 2005 – June 2018[6]



Source: Colony Capital, Bloomberg and Barclays

It may be possible to mitigate these risks cited above through an improved REIT selection strategy that identifies and removes the riskiest, i.e. the poorest quality REITs. For example, Figure 7 also shows a strategy, named the Colony Fundamental US REIT strategy, where in historical simulations it consistently outperformed the broad REIT benchmark and in particularly during broad REIT sector price declines. In the next section, we specifically investigate this strategy which uses an approach based on a risk-mitigation framework to identify which REITs are best to avoid when forming a REITs portfolio.

Choosing REIT Stocks in the Cross-Section

We investigate an investment strategy informed by Colony Capital's private market real estate investment philosophy and the empirical characteristics of listed real estate highlighted in the previous section. It is premised on the idea that what works best in real estate investing is to look for high quality assets conservatively financed.

[5] Property fund returns are lagged by twelve months relative to stock market returns.
[6] This time period was used because the backtest of the highly leveraged portfolio ends in June 2018.

As such, the investment thesis is as follows:

1. A portfolio that avoids the riskiest REITs and concentrates in higher quality names will outperform.
2. Such a portfolio can be systematically formed because there are historically demonstrated markers of risk that can be identified with simple rules.

We posit that there are fundamental characteristics of REITs underperformance which can be classified as follows:

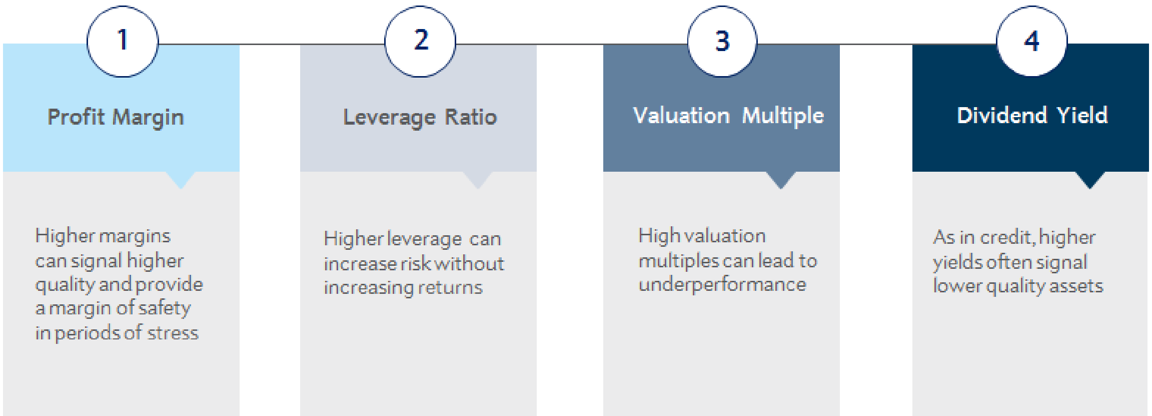
- **Low Profitability:** REITs with lower profit margins have less leeway than other REITs to withstand revenue fluctuations in their business.

- **High Leverage:** In addition to increasing risk, debt also restricts REIT managers' ability to act opportunistically. REITs that have locked themselves into large debt service obligations will likely lack the flexibility to acquire real estate cheaply during cyclical downturns. This disadvantage has not historically been offset by enhanced returns for highly levered REITs in benign periods.

- **High Valuation:** There are no Amazon-like high growth stories in the REIT sector. REITs engage primarily in the collection of rent. Investors should be wary of valuations that can only be justified by a high income growth rate. The most expensive REITs at any given point in time have tended to underperform in subsequent periods.

- **High Yield:** In REITs investing, just as in corporate bond investing, higher yields generally signal higher risk. The risk signalling value of yield is furthered for REITs by the prevalence of "yield-chasing" behaviour in the market. Higher yielding REITs attract this yield-chasing capital, making them incrementally overvalued relative to the risk. Thus high yield in REITs signals both higher risk and overvaluation at the same time.

Figure 8: The Colony REIT Risk Factors



Source: Colony Capital

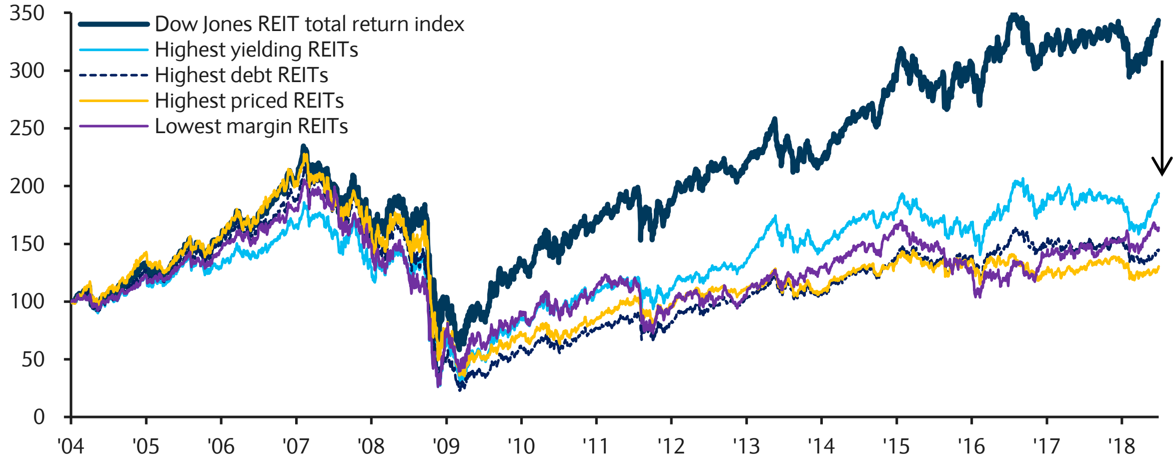
As such, Figure 8 highlights four risk factors which can be used in the cross-section of REITs to identify and remove REITs to form a portfolio systematically. The investment screening process begins with the broad universe of US equity REITs (excluding mortgage REITs) and excludes the least profitable (lowest operating margin), most indebted, most expensive and highest yielding according to simple percentile cut-offs.[7] Figure 9 shows the performance of these respective excluded stocks by characteristic (hereafter named the "excluded stock portfolios"), highlighting their underperformance versus the REIT sector by a wide margin.[8] Not only have these four higher risk portfolios delivered lower returns on average, they have done so with more severe drawdowns.

[7] This paper does not consider mortgage REITs, which are REITs that do not primarily transact in tangible real estate but instead loan money for mortgages or trade mortgage-backed securities. Mortgage REITs are financial institutions that are likely to have different risk characteristics than the equity REITs investigated in this study.

[8] These excluded stock portfolios are formed and rebalanced quarterly, based on a market capitalisation weighting scheme.

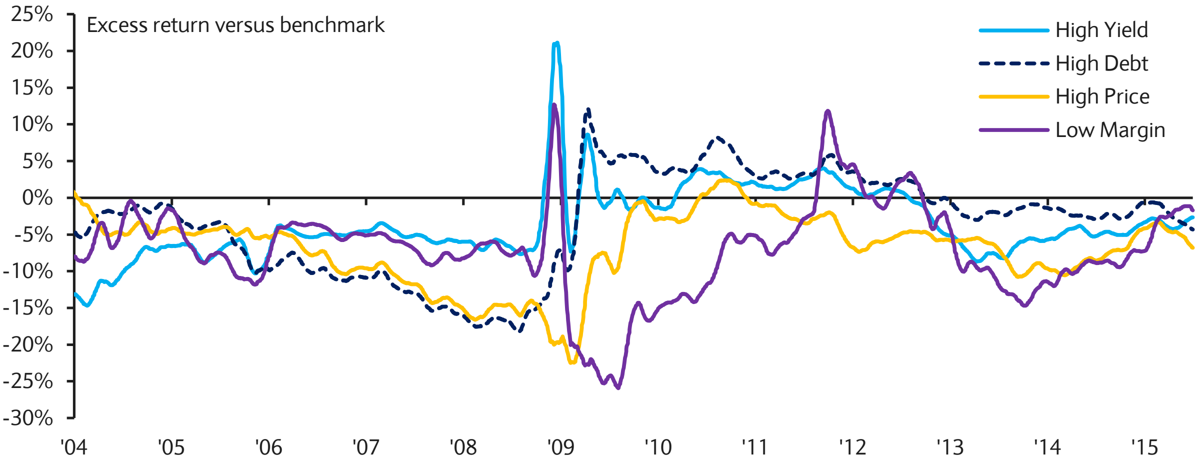
Note that this underperformance does not require a full cycle to manifest: The excluded stock portfolios would have underperformed even during the past five years. Apart from a sharp post-crash bounce back in 2009-2010, there are very few periods in which any of the excluded stock portfolios outperformed (Figure 10). For REITs, these risks do not appear to be offset by higher returns.

Figure 9: Lower quality REITs have historically underperformed the sector, January 2004 – June 2018



Source: Colony Capital and Barclays

Figure 10: Rolling 3 years excess return of the low quality REIT portfolios, January 2004 – June 2018

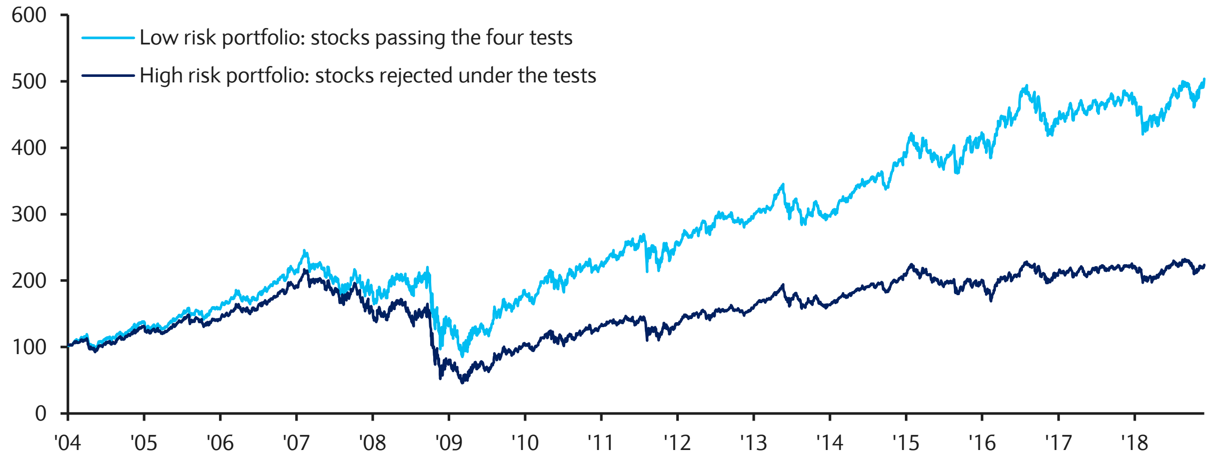


Source: Colony Capital and Barclays

Each of the four risk factors is relatively independent of the others, making each selection rule in the strategy important. This fact can be verified by counting the overlap of stocks among the four excluded portfolios and by observing the performance of each portfolio. Four of the six possible portfolio pairs appear to exhibit complete independence, with similar or less overlap than might be expected by simple chance. Interestingly, the high price and high yield portfolios have an unusually low overlap. This result is not surprising, given that a high yield generally implies a low price. The independence of the factors is further demonstrated by the lack of correlation between the excess returns on the excluded portfolios. No pair of excluded portfolios had a correlation of returns greater than 50% over either the full sample period or the past five years. Additionally, on those occasions when one or more excluded portfolios outperformed the benchmark, others tended to underperform by a similar magnitude (Figure 10). Over the backtest period at least two of the excluded portfolios underperformed the benchmark portfolio in 75% of all three month periods and in 89% of all twelve month periods. This offsetting effect highlights not only the independence but the complementary nature of the four risk factors for stock selection.

It follows that a strategy based upon excluding all four high risk portfolios should deliver better returns and lower risk. This is in fact exactly what would have happened during the sample period (Figure 11). The low risk portfolio (selected stocks), which employs all four risk factors for screening, outperformed the REIT benchmark by about 2.5% annually. It also outperformed the high risk portfolio (excluded stocks) by close to 6% annually, and did so with lower volatility and a less severe maximum drawdown.[9] These results are robust: outperformance was not disproportionately driven by any single stock or subsector, and could have been achieved with modest changes to the quantile cutoffs specified. The use of the four risk factors resulted in the REIT universe being split roughly in half between the selected stock portfolio and the excluded stock portfolio, indicating the strategy's broad practical implement-ability.

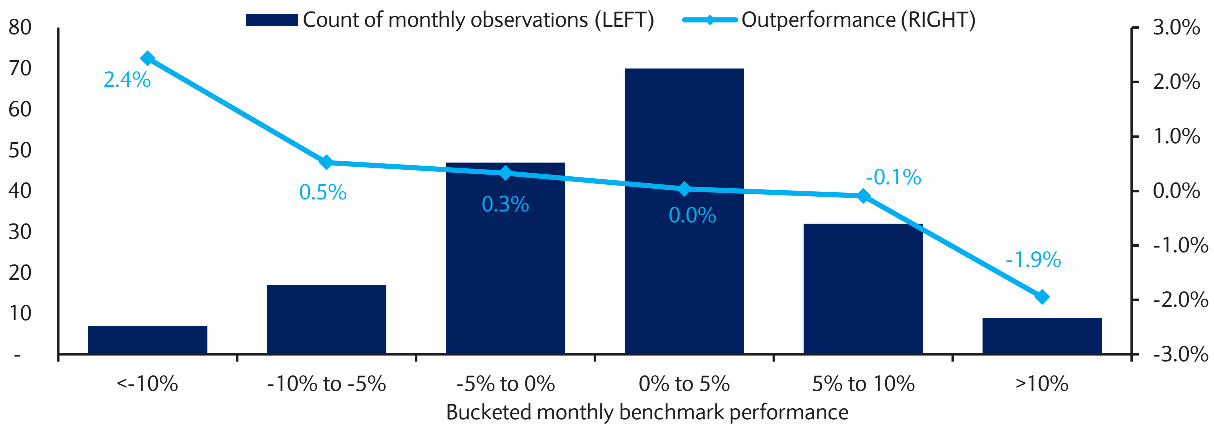
Figure 11: Total return performance of the selected stocks versus excluded stocks, January 2004 – December 2018



Source: Colony Capital and Barclays.

The outperformance of a high quality, low risk REIT strategy appears to be sensitive to the market environment. Even though the outperformance was distributed throughout the historical backtest, excess returns were greatest when the broad market was weak, a result expected and consistent with a risk-minimizing designed strategy (Figures 7, 12). For example, the strategy outperformed the REIT benchmark in about 50% of all overlapping 3-month periods over the past 15 years, but outperformed in close to 70% of periods when the benchmark was down, where the largest outperformance occurred in periods when the benchmark declined the most.

Figure 12: Strategy excess (total) returns above benchmark, conditional on benchmark returns, January 2004 – December 2018



Source: Colony Capital and Barclays

[9] These portfolios are formed similar to the earlier portfolios in that they are formed and rebalanced quarterly, based on a market capitalisation weighting scheme.

Finally, we note that this strategy outperformed the major REIT funds that have been in the market since 2005 (Table 3), both in terms of average returns, Sharpe ratio and better drawdown properties. In the next section, we investigate the portfolio implications of adding this strategy and REITs in general to the portfolio mix.

Table 3: REITs quality strategy versus largest US REIT funds, January 2004 – December 2018

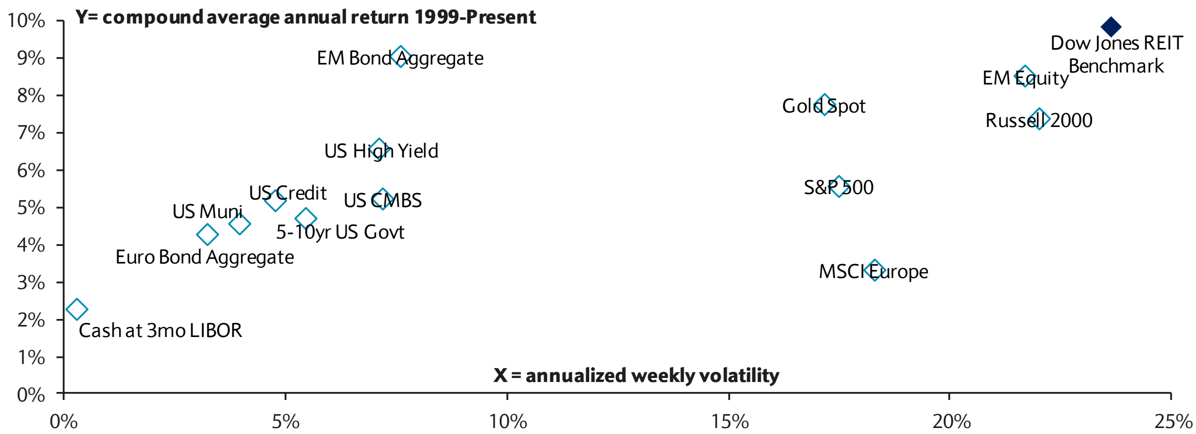
	Annualized Total Return	Volatility	Sharpe Ratio	Max Drawdown
Colony Capital US Fundamental Real Estate strategy	**10.5%**	**25%**	**0.4**	**-65%**
Dow Jones REIT Total Return Index (benchmark)	8.1%	26%	0.2	-75%
Vanguard Real Estate Index	8.2%	26%	0.3	-73%
DFA Real Estate Securities I	8.3%	26%	0.3	-74%
T. Rowe Price Real Estate	8.1%	26%	0.3	-74%
Cohen & Steers Real Estate Securities	8.3%	24%	0.3	-72%
i-Shares US Real Estate ETF	7.2%	25%	0.2	-74%

Source: Bloomberg and Barclays

Portfolio Benefits of Real Estate and REITs

There could be meaningful benefits from adding REITs to a standard equity investment portfolio. REITs were one of the best performing liquid investment types over the last 20 years, not only in absolute terms but in risk adjusted terms as well (Figure 13). While REITs are a form of listed equity, indices referencing REITs may offer a diversification benefit (Agarwal (2013)). A stark and simple example of this is the 2000-2003 period where the S&P 500 lost a quarter of its value while an investment in REIT shares would have doubled.

Figure 13: Risk-reward profile across asset types, January 1999 – December 2018[10]



Source: Bloomberg and Barclays

As for the addition of the Colony REIT strategy to an investment portfolio specifically, this historically would have given a better diversification benefit than an equivalent investment in the REIT benchmark. This is demonstrated in Figures 14 and 15, which show the changes in return, volatility and maximum drawdown if some percentage of either the Colony strategy or the Dow Jones REIT benchmark were added to starting from a traditional "60/40" portfolio consisting of 60% S&P 500 and 40% US Aggregate bonds. While an allocation to either the REIT benchmark or to the Colony strategy would have increased portfolio return, the Colony strategy would have added more return per unit of either additional volatility or maximum drawdown.

[10] REIT benchmark is the Dow Jones REIT index. Note that the estimated annual return on physical property as measured by the NCREIF real property index was about 9% per year. Physical property is not shown because weekly volatility is not applicable.

Figure 14: Effect of a REIT allocation on portfolio total return and volatility, 2004 – 2018

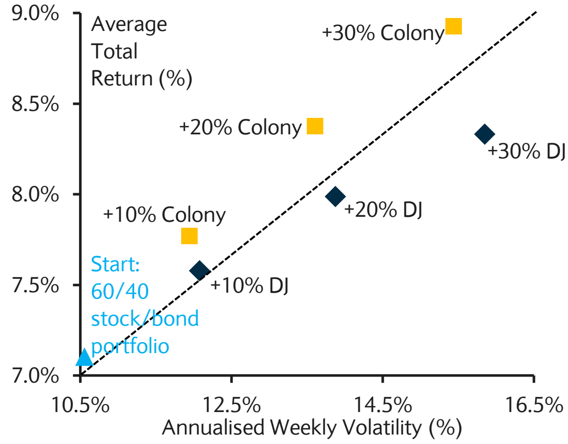
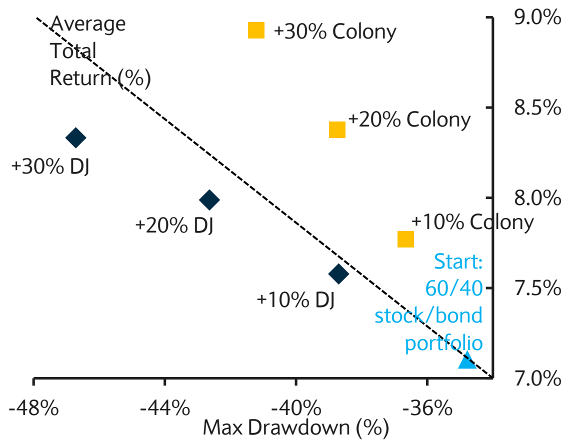


Figure 15: Effect of a REIT allocation on portfolio total return and drawdown, 2004 – 2018



Source: Bloomberg, Colony Capital and Barclays

There are additional portfolio considerations for real estate investors concerning the lower cost of REIT investing relative to physical real estate that also deserve attention. Evidence in this area comes from a November 2018 study on the investment selection and performance of U.S. defined benefit pension funds by CEM Benchmarking.[11] For the eighteen years 1998-2016, the study found the REITs to be second only to private equity in terms of gross return (11.6% simple average versus 12.3%). At an estimated one quarter of the expense however (0.5% for REITs versus 2.0% for private equity by CEM's reckoning), REITs were the highest performer on a net basis. Private real estate earned a gross return of about 10% but carried an estimated 1% cost, thus ranking it only in the middle.

Therefore, there is good reason to argue some of the money currently allocated to private real estate funds ought to be invested instead in *listed* real estate. The ~10% average annual return on REITs shown in Figure 13 compares well with the ~9% delivered by a portfolio of the largest core property funds over the same period. Nonetheless Green Street, a REIT specialist research firm, reports that institutions have been *reducing* their REIT allocations and *increasing* their higher cost private real estate allocations. The reason many investors cite for avoiding REITs is their stock-like volatility, but, as previously shown in Figure 6, REITs serve as a good proxy for physical property over a multi-year time horizon. They also offer better liquidity over any time horizon.

Conclusion

Real estate can be an attractive asset class, offering durable cash flows derived from contractual rents. REITs provide investors with a structural advantage when investing in real estate, offering exposure to quality real estate assets in a format that provides diversification, professional management, liquidity and tax efficiency. The Colony strategy has derived historical outperformance through risk mitigation using an approach to identify "quality" REITs in the cross-section of REITs, from which to form a portfolio. Using insights from Colony Capital's real estate investment platform, the strategy screens out REITs that carry disproportionate risks due to leverage, margin, yield and valuation characteristics. The REITs that passed these fundamental factor screens historically demonstrated significant and sustained outperformance over the excluded securities and the broad sector. These identified factors appear statistically robust and largely independent of each other. Importantly, they are based on fundamental principles that appear likely to endure. The strategy studied here thus appears to be a viable approach to investing in an attractive asset class, in a risk mitigated way which historically improved risk-adjusted returns.

[11] Of about $25 trillion in US retirement assets, $8.4 billion are in defined benefit pension programs, and the study covered $3.5 trillion of assets in more than 200 such funds, a significant sample of the institutionally managed money in the United States. Investments were divided into twelve broad asset types, with listed equity REITs and private real estate treated as separate categories.

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- BCSL is authorised by the Prudential Regulation Authority of the United Kingdom (PRA) and regulated by the Financial Conduct Authority (FCA) of the United Kingdom and the PRA under United Kingdom laws.
- BCI is regulated by the United States Securities and Exchange Commission (US SEC) under United States laws.

All of the abovementioned jurisdictions have laws which differ from Australian laws. When providing financial services to Australian wholesale clients, BCAL, BCSL and BCI rely on the relevant exemption from the requirement to hold an AFSL. Accordingly, BCAL, BCSL and BCI do not hold an AFSL.

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