New construction opportunities for the REIT model

February 2019

Research Signals

The Research Signals REIT Model II combines various fundamental indicators, property-level metrics, demographic trends and investor sentiment to differentiate leaders and laggards in the real estate sector. We review recent enhancements in the construction of the model, with the underlying methodology remaining a rigorous bottom-up approach designed to systematically evaluate publicly traded US REITs.

- Model developments include incorporation of a new data source and reassessment of all factors, supporting deeper scrutiny of the industry given the recent separation of REITs from financials as its own sector classification
- The REIT Model II buy-rated portfolio outperformed the sell-rated portfolio by 0.81% per month, or 9.77% annualized, over our recently expanded REIT universe and we further demonstrate its successful use as a weighting scheme in long-only active and passive portfolio construction
- All sub-composites recorded positive average monthly return spreads with the most notable results associated with Price Momentum (1.14%) followed by Value (0.49%), which incorporates a key enhancement to the capitalization rate

Contacts

Research Signals · MK-ResearchSignals@ihsmarkit.com

IHS Markit

Introduction

As part of our broad coverage of targeted specialty metrics designed for specific industries, IHS Markit first introduced a REIT model in September 2005 built on a diversified set of signals using financial statement data alongside detailed property level information and location demographics. Data sources include the Costar property database, Real Capital Analytics (more below on this newly added data), ESRI demographics data, Vickers institutional ownership and insider trading data and IHS Markit self-sourced bond, dividend forecasts and securities lending data.

The IHS Markit REIT model is a bottom-up approach designed to systematically evaluate publicly traded US REITs. Using the various fundamental indicators, property-level metrics and investor sentiment, the model seeks to identify companies that are poised for out/underperformance, with the overall composite comprised of the following nine modules:

- Value
- Ownership & Liquidity
- Business Strategy
- Management Quality
- Capital Structure
- Growth and Dividend Policy
- Earnings Momentum
- Price Momentum
- Short Sentiment

While a longtime dependable tool in our factor library, our customary review of each of our strategies unveiled useful developments to our REIT data sources and factor interactions that we describe below. First we provide more detail on several new data sources - Real Capital Analytics (RCA), IHS Markit Dividend Forecasting and IHS Markit Securities Finance - and then bring it all together with the introduction of the new IHS Markit REIT II model. Next we review resulting changes in coverage followed by a performance review of the updated model. Lastly, we provide long-only use cases of the model in portfolio construction.

New data sources

Real Capital Analytics

Net asset value to price (NAVP) is arguably the most widely accepted REIT valuation methodology and the largest component of our model. A disadvantage is that the most critical input in the NAV calculation, the capitalization rate of a REIT's underlying properties, is difficult to estimate. The cap rate captures the initial annual un-leveraged return on acquisition. It is measured as the ratio of net operating income produced by a property and its capital cost. Previously, we used the 10-year Treusury yield as the baseline cap rate for all REITs, regardless of region and building type, and adjusted it by a risk and recapture premium.

As an important update to our NAVP calculation, we tap into RCA data on granular capitalization rates for each major

property type and regional market which serves as a more representative baseline cap rate for each property. RCA products and services are based on a proprietary database of commercial property transactions tracked since 2000. We receive monthly updates of the cap rates observed from transactions, providing an up-to-date view of investment activity in the real estate market. Property types include office, industrial, retail, multi-family/apartment, hotel, development sites and senior housing and care. In the new model, we begin with the cap rate from RCA and then adjust it by a discount or premium based on quality and age, demographics and location factors to produce our proprietary cap rate.

IHS Markit Dividend Forecasting

IHS Markit's Dividend Forecasting service provides independent, discrete forecasts for dividend amounts and dates up to four years in the future. The product was established over ten years ago and covers over 8,000 stocks globally, including emerging markets, ADRs, and US listed ETFs. Dividend forecasts are created using a bottom-up, research-led methodology to provide the highest level of accuracy for both amount and dates.

Forecasts are based on inputs including latest market news and direct company guidance, combined with fundamental analysis, historical observations, conference call statements and peer group trends. They are further enhanced by a number of proprietary datasets available within IHS Markit, from consensus OTC implied dividends and short interest data to macro PMI and credit spread data.

IHS Markit Securities Finance

IHS Markit Securities Finance (MSF) provides daily global securities lending data capturing the supply, demand and borrow cost of individual securities in the lending market, MSF provides benchmarking and transparency for all stock loan market participants. Information is sourced directly from leading industry participants including prime brokers, custodians, asset managers and hedge funds.

MSF covers more than 3 million intraday transactions dating back 12 years, spanning more than $20 trillion of global securities in the lending programs of over 20,000 institutional funds. This comprehensive dataset includes a wide range of securities lending metrics collected on a daily frequency. Content includes shares borrowed, inventory of available shares on loan, level of utilization, loan concentration, and stock borrowing costs.

Model update

With this background, we now introduce the new IHS Markit REIT II model and, in the next section, we take a look at model and sub-composite performance. First, the overall structure of the model remains mostly the same:

- Value – This module aims to identify REITs trading at a premium or discount, measured by NAVP and common price mulitiples used in this industry, forward dividend yield and FFO to price. In the NAVP calculation, the property value is estimated using our proprietary cap rate calculation described above and adjusted net operating income. The property value is then combined with balance sheet assets and liabilities to obtain the NAV.

- Ownership & Liquidity – Empirical evidence suggests that REITs with high insider ownership outperform peers with lower insider ownership. In addition, more liquid REITs have historically been better performers than their less liquid counterparts. Markit represents ownership and liquidity through several intuitive variables, which individually explain the cross-section of expected REIT returns.

- Business Strategy – Business Strategy analyzes the characteristics of the REIT's property portfolio and profitability ratios to determine how the REIT is positioned for the future.

- Management Quality – This is particularly important in the REIT world, where the ability of management to increase shareholders' value through smart and timely acquisitions, dispositions and development is quantifiable and easily rewarded. This module includes efficiency ratios, overhead expense ratios as well as debt and equity issuance measures.

- Capital Structure – Some of the variables analyzed to determine capital structure rank include exposure to variable rate debt, debt maturity risk and average weighted debt maturity. This factor associates REIT risk based on its debt burden.

- Growth and Dividend Policy – The requirement to pay 90% of taxable income as dividends reduces REITs' ability to grow via profit ploughing. Despite this, growth is a highly rewarded characteristic by the market. Some of the variables used to compute this factor include same property NOI growth, FFO payout (lower is better) and 1- and 5-year FFO growth rates.

- Earnings Momentum – For this factor we rank REITs based on analysts' estimates using surprise, revisions and forecast dispersion measures.

- Price Momentum – According to our research, REITs exhibit price reversals over short horizons and momentum over long time periods. We factor in these price movements in this model, using 5 technical factors, some of which are industry-relative.

- Short Sentiment – Our Short Sentiment factor suite uses proprietary IHS Markit Securities Finance short interest data, from which we rank REITs daily according to the amount of stock borrowed relative to lending supply and borrowing cost.

Specific factor detail is provided in the Appendix, however, we draw attention to some notable updates. First, as described above, a major development to our model enhancements is the availability of the new RCA data source, providing unique REIT insights into cap rates used in the calculation of NAVP.

An important aspect of our Value sub-composite is the further blending of NAVP with unique insights from the private market, the economy and the stock market. One such factor which was added in this update is Leading 12 Month Total Dividend Yield. This exclusive Research Signals factor is calculated using IHS Markit Dividend Forecast's rigorous methodology. This factor scales the forecasted total dividends over the next year by current stock price. Both regular and special dividends are included to reflect overall corporate actions.We also highlight the addition of the Short Sentiment module capturing daily supply, demand and borrow cost of individual securities in the lending market.

As another aspect of our regular review, we also analyzed each of the component factors to confirm their contributions to the final model. Beyond alpha generation, a major characteristic for each of our multi-factor strategies is to include only unique factor signals thus avoiding multicollinearity, in other words, factors which are highly correlated, which is commonly known to statistically degrade from the robustness of the model. The final list of factors meets this criterion.

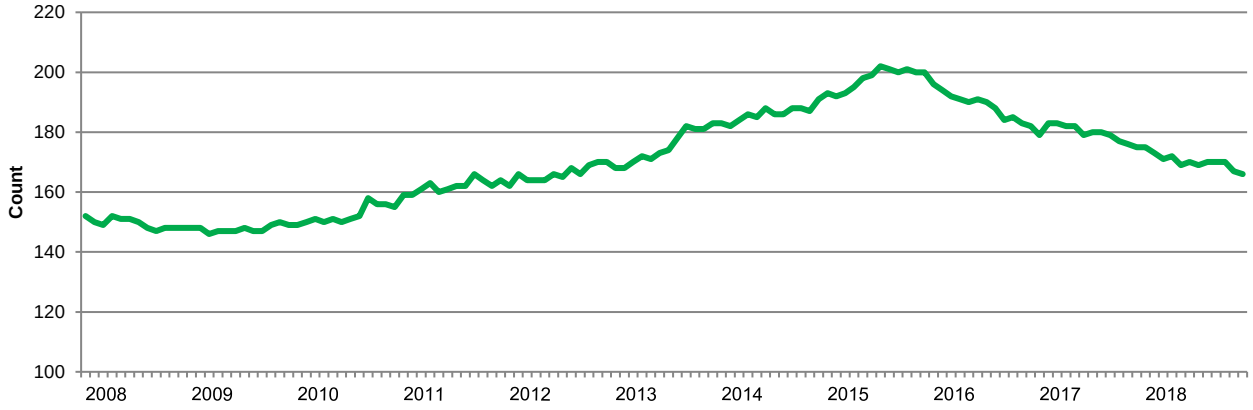
REIT universe

Before we move to a presentation of model performance, we remark that enhancements to our REIT model methodology have opened up opportunities to expand our universe coverage. In defining the universe, we start with the US REITs industry in our US Total Cap universe (representing 98% of cumulative market cap). Next, we exclude mortgage REITs which facilitate the financing of real estate, retaining just the equity REITs whose revenues come principally from rents and represent the majority of the sector.

The industries within the resulting sector have a diverse representation from retail to health care and office to industrial, with each characterizing unique behavior. Coverage over time has ranged between 150 to 200, and currently stands at approximately 165 names as the specialty data that feeds our model has taken on broader coverage.

Figure 1

US REIT universe coverage



Source: IHS Markit

Model updates and changes in coverage coincide with the increased need for analysis of REITs given the industry's recent separation from Financials as an 11th Global Industry Classification Standard (GICS) sector classification beginning September 1st 2016. Note that mortgage REITs, which we continue to exclude from our coverage universe, remain in the GICS financials sector.

We have long acknowledged the fundamental differences between REITs and other financials with separate models dedicated to evaluating each segment. The increasing size, attention and anticipated additional flows to this typically underweighted industry adds credence to the importance of a systematic methodology for valuing the distinct characteristics of this asset class.

Model performance

Given this background we now review performance for the IHS Markit REIT II model. Results are focused on equal-weight quintile return spreads based on an investment strategy going long the highest ranked stocks (Q1) and shorting those with the lowest ranks (Q5). We report monthly average model and sub-composite statistics (Table 1) back to January 2008 which includes the financial crisis period. Figure 2 also displays cumulative monthly model performance while a time series of monthly model spreads and buy (Q1) and sell (Q5) portfolio excess returns can be found in the Appendix (see Figures A1-A3).

Over the full backtest period, the model recorded an average monthly spread of 0.81%, or 9.77% annualized, with positive performance in 64% of months. The outperformance was driven almost equally by the Q1 (0.39%) and Q5 portfolios (-0.42%). On a cumulative basis, the spreads reached 107% over the 11 year period, stemming from buy and sell portfolio cumulative returns of 52% and -56%, respectively.

At the sub-composite level, the top performing module was Price Momentum with an average monthly spread of 1.14%, or 13.72% annualized, again with similar Q1 (0.50%) and Q5 (-0.64%) results. Value was also a strong indicator with an average monthly spread of 0.49% (Q1: 0.24%; Q5: -0.25%), followed closely by Earnings Momentum with an average monthly spread of 0.43% (Q1: 0.25%; Q5 -0.18%).

Table 1

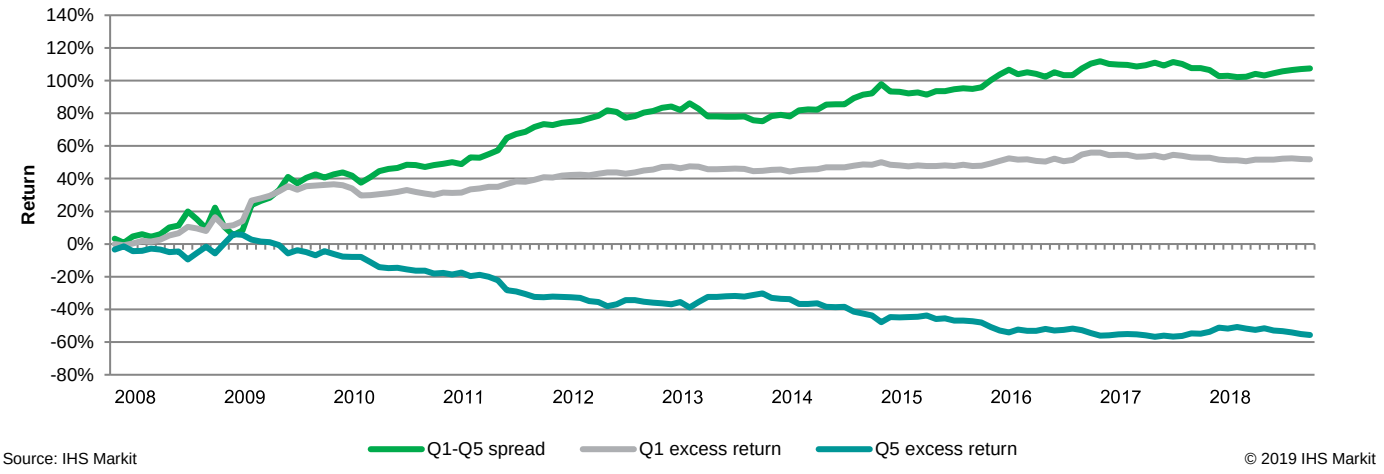
US REIT Model II average monthly performance, Jan 2008 – Dec 2018

Strategy	Q1-Q5 spread	Q1 excess return	Q5 excess return
REIT Model II	0.81%	0.39%	-0.42%
Value	0.49%	0.24%	-0.25%
Ownership & Liquidity	0.14%	-0.06%	-0.20%
Business Strategy	0.09%	-0.09%	-0.19%
Management Quality	0.20%	0.11%	-0.09%
Capital Structure	0.12%	-0.07%	-0.19%
Growth and Dividend Policy	0.05%	-0.07%	-0.11%
Earnings Momentum	0.43%	0.25%	-0.18%
Price Momentum	1.14%	0.50%	-0.64%
Short Sentiment	0.02%	-0.01%	-0.03%

Source: IHS Markit

Figure 2

US REIT Model II cumulative monthly performance



Source: IHS Markit

We also compare performance of the new model and NAV to Price rank, which incorporates the new Capitalization Rate, with those of the original model. Note that for this analysis, we examine results over the smaller legacy REIT universe due to data availability. Performance results are summized in Table 2 with a detailed comparison of the average, standard deviation, information ratio (IR) and hit rate of the Q1-Q5 spread, along with the information coefficient (IC) which measures the rank correlation of model scores and returns.

Overall, the average spreads are similar over time for the model (0.52% versus 0.55%) and NAV to Price rank (0.51% versus 0.49%). However, a key improvement from the model update is the reduction in volatility resulting in more attractive IRs, which is computed as the average divided by the standard deviation. Based on this signal to noise ratio, we find that the model (NAV to Price) IR increased to 0.20 (0.14) from 0.15 (0.10). We also draw attention to the improved IC for the model (0.035 versus 0.023) and NAV to Price rank (0.006 versus -0.004).

Table 2

US REIT monthly spread and IC performance comparison, Jan 2008 – Dec 2018

Statistic	REIT Model II	REIT Model	NAV to Price II	NAV to Price
Average	0.52%	0.55%	0.51%	0.49%
Standard deviation	0.026	0.037	0.037	0.049
Information ratio (IR)	0.20	0.15	0.14	0.10
Hit rate	55%	57%	54%	54%
Information coefficient (IC)	0.035	0.023	0.006	-0.004

Source: IHS Markit

Model application

We round out the report with examples of the use of REIT Model II as the weighting scheme in portfolio construction rather than merely a stock selection signal. In the first application, we used the composite quintile score as the weighting methodology over the full universe and secondly using the percentile ranks of buy-rated stocks in the top quintile. In a similar manner, we considered an application focused specifically on the NAV to Price rank, which is a key component of the Value sub-composite comrpised of the Capitalization Rate, Adjusted Net Operating Income, Property Market Value and NAV/Share.

Results are summarized on both an equal- and cap-weighted basis which more closely mimics a standard portfolio setting (Table 3). We find that both the model composite and NAV to Price rank demonstrate efficacy as a weighting scheme in portfolio applications. Over the full universe, the methodologies experienced hit rates (percent of months in which rank weighting outperformed the base case) in excess of 60% on equal-weighted basis and 55% and 53%, respectively, on a cap-weighted basis.

Looking just at the buy-rated (Q1) names, we also find positive results by applying both rank weighting methodologies. The largest improvement in outperformance is associated with the NAV to Price rank cap-weighted performance with an improvement of 29 bps per month on average over the base case (hit rate: 56%). These encouraging results support the notion that the model can be a useful tool for long-only active and passive strategies.

Table 3

Portfolio application monthly performance, Jan 2008 – Dec 2018

		Rank weighting application		Base case		
	Strategy	Average return	Information ratio	Average return	Information ratio	Hit rate
REIT Model II composite	Full universe					
	Cap-weighted	0.81%	0.12	0.75%	0.11	55%
	Equal-weighted	0.94%	0.13	0.81%	0.12	63%
	Q1					
	Cap-weighted	1.12%	0.15	1.06%	0.14	58%
	Equal-weighted	1.24%	0.16	1.21%	0.15	52%
NAV to Price rank	Full universe					
	Cap-weighted	0.87%	0.14	0.79%	0.12	53%
	Equal-weighted	0.98%	0.14	0.86%	0.13	61%
	Q1					
	Cap-weighted	1.74%	0.18	1.45%	0.13	56%
	Equal-weighted	1.66%	0.16	1.55%	0.17	50%

Source: IHS Markit

Conclusion

The Research Signals REIT methodology continues to provide a consistent source of excess return in this targeted investment universe since its inception in late 2005. With our regular review of each of our strategies, we present recent developments in our REIT data sources and factor interactions and introduce the new REIT Model II.

Coverage has expanded to over 160 names as the specialty data that feeds our model has taken on broader coverage. Model updates and changes in coverage coincide with the increased need for analysis of REITs given the industry's recent separation from Financials as an 11th GICS sector classification.

The model maintains its overall structure capturing quality and performance attributes of REITs, with the addition of the RCA cap rate to compute the Value sub-composite, the largest component of our model. We also analyzed each of the component factors to confirm their unique contributions to the final model, with the final list of factors meeting this criterion.

Since 2008, a period which includes the financial crisis, the REIT Model II has posted an average monthly spread of 0.81%, or 9.77% annualized, with positive performance in 64% of months. The buy and sell portfolios contributed mostly equally with Q1 and Q5 average monthly excess returns of 0.39% and -0.42%, respectively. All sub-composites posted positive average monthly return spreads, led by Price Momentum (1.14%), Value (0.49%) and Earnings Momentum (0.43%).

A detailed comparison of REIT Model II performance and the updated NAV to Price rank with those of the original model shows a desirable reduction in volatility resulting in improved IRs, along with an increase in IC. Lastly, we find that both the model composite and the key NAV to Price rank can be used successfully as a weighting scheme for use in long-only active and passive portfolio construction.

Appendix

REIT model

Value (30%)

- Net Asset Value to Price (NAVP)
  - > Capitalization Rate
  - > Adjusted Net Operating Income
  - > Property Market Value
  - > NAV/Share
- Leading 12 Month Total Dividend Yield
- Price to Current FFO

Ownership & Liquidity (10%)

- % Institutional Ownership
- % Insider Ownership
- 20-day Average Volume
- Fully Diluted Shares Outstanding

Management Quality (10%)

- Self-Advised Rank
- Self-Managed Rank
- Return on Average Assets
- Return on Average Common Equity
- G&A Expenses to Total Revenue
- G&A Expenses to Gross Properties (from NAV)
- % Change in Shares Outstanding
- % Change in Debt Issuance

Business Strategy (15%)

- Location Attractiveness
- Property Sector Attractiveness
- Demographic Rank
- Property Quality and Age Rank
- Geographic Concentration
- Portfolio Occupancy Rate
- Rent Margin
- Partnership Income/Investments
- NOI / Average Gross Properties

Capital Structure (10%)

- Exposure to Variable Rate Debt
- Exposure to Debt Maturity Risk
- Debt to Market Cap

- Debt to Total Capital
- EBITDA to Interest Expense
- Average Weighted Debt Maturity

Growth and Dividend Policy (10%)
- Property NOI Growth
- Property Revenue Growth
- 1-Year Ahead Regular Dividend Growth
- FFO Payout
- Estimated FFO Growth
- 5-year FFO per Share Growth
- Equity Growth

Earnings Momentum (5%)
- Product of Forward FCF Yield and Forward ROE
- Most Recent Quarterly FFO Surprise
- Change in FFO Surprise
- Net # of Revisions for FY1
- 3-month Revision in FY2 FFO Forecasts
- FY2 FFO Forecast Dispersion
- I/B/E/S Long-Term Growth Rate Estimates
- 2-Year Projected FFO Growth

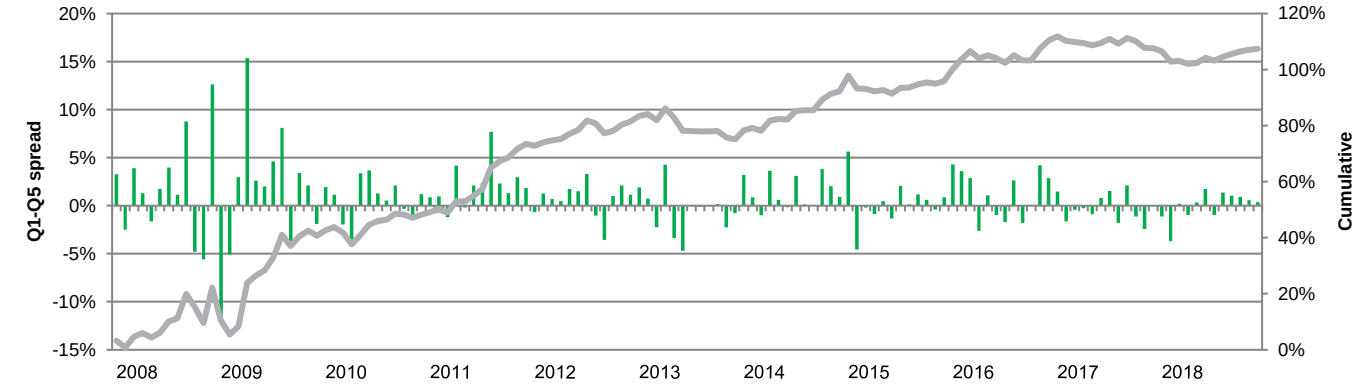
Price Momentum (5%)
- Difference between ATM Put Volatility and ATM Call Volatility
- Rational Decay Alpha
- Visibility Ratio
- 5-day Industry Relative Reversal
- Industry-adjusted 12-month Relative Price Strength

Short Sentiment (5%)
- Demand Supply Ratio
- Implied Loan Rate

Performance results

Figure A1

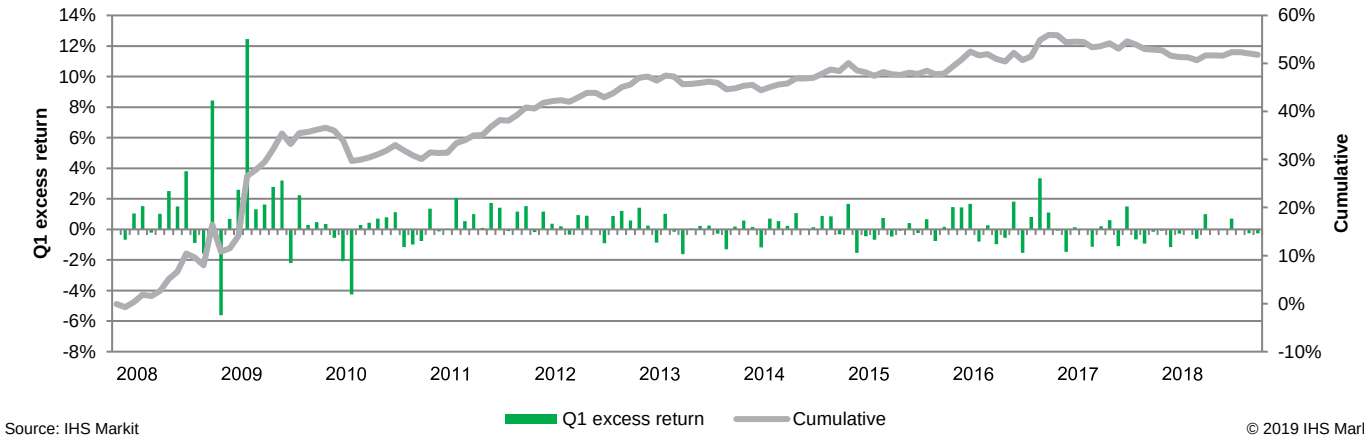
US REIT Model II Q1-Q5 spread performance



Source: IHS Markit

Figure A2

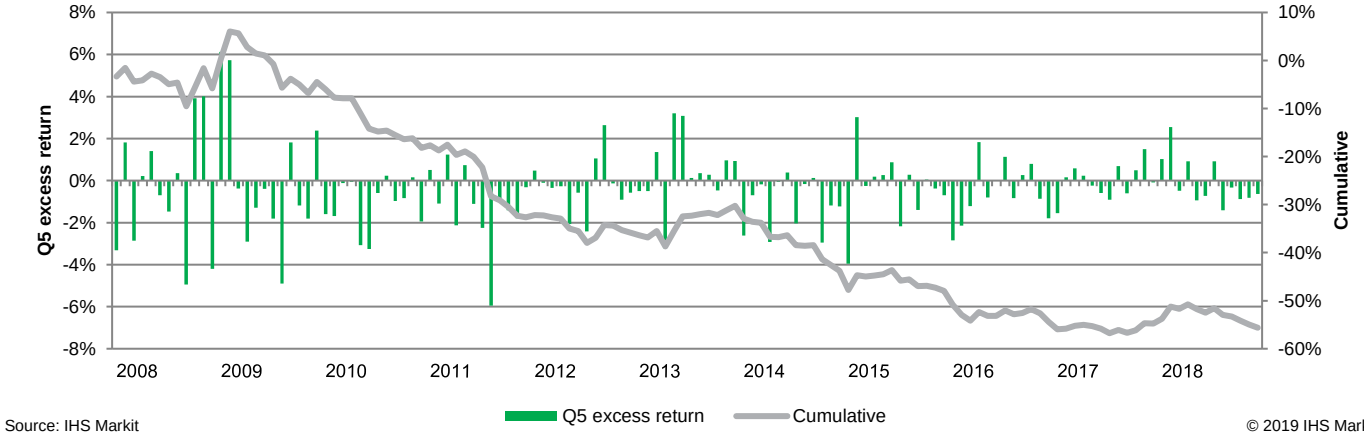
US REIT Model II Q1 performance



Source: IHS Markit

Figure A3

US REIT Model II Q5 performance



Source: IHS Markit

IHS Markit Customer Support:

Support@ihsmarkit.com
Americas: +1 877 762 7548
Europe, Middle East, and Africa: 00800 6275 4800
Asia and the Pacific Rim: +65 6922 4210