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TRIVARIATE RESEARCH

THE RISKIEST SECTOR IN THE MARKET...

6/9/2021

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SUMMARY – KEEP YOUR EXPOSURE TO REITS VERY LOW

We strongly recommend equity investors run a portfolio with low gross exposure to REITS as we see several signs that make investment in REITS particularly risky today:

1. **Model fails during bear steepening**: Our 8-signal model that predicts subsequent stock returns for REITS fails during periods when there is a bear steepening of the yield curve but performs well otherwise. While there has been a pause in the back-up in 10-year yields that first began in August of 2020, any thesis that includes bear steepening will probably make picking winners from losers within REITS more challenging. The whole call will be a beta call, not an alpha one
2. **Signals are correlated**: These same 8 signals we use in our model averaged a correlation of roughly 0.1 for most of the past decade, but rocketed to a 0.7 correlation post the Pfizer vaccine announcement – this is the reason the quantitative models have been performing poorly, the signals are no longer discriminating
3. **Relationship to interest rates**: As a sector, REITS used to have a negative and statistically significant relationship to changes in the 10-year yield, but now this relationship is positive, likely confounded by the mix of retail, hotel and resort REITS representing a strong "reopening" tilt. We find this to be worrisome, as the perception of economic reopening is so strong now that it offsets years of a meaningful and opposite relationship to interest rates
4. **Negative asymmetric beta**: Many of the stocks with the most negative beta convexity are REITS, meaning it is highly likely during the next market sell-off that REITS will disproportionately participate in the sell-off

PREFER SPECIALTY REITS TO HOTELS / RESORTS AND RETAIL REITS

1. "Reopening" correlations are quite high for REITS, although we suspect this slowly continues to wane into 2022, and then "isn't a phrase again" by 2023
2. In aggregate, REITS are expensive, currently hovering at an all-time high on price to FFO. Meanwhile, forecasted sector FFO / share is basically at the same level it was five-years ago, meaning valuation and expectations for profitability currently look unattractive

When we look at stock selection, intra-group pairwise correlations and company-specific risk are two gauges we consider. Specialty REITS (data centers and towers, etc.) have far lower average pairwise correlations and far more company-specific risk than hotel and resorts or retail REITS, which are essentially correlated calls on reopening surprising vs. expectations. Therefore, any hopes for alpha probably should be focused in specialty REITS, where beta is derived from the rest of the group

CONCLUSION: Run with a low gross in REITS. If you search for alpha, look in specialty REITS, as the rest of REITS are a highly correlated and highly "macro" call, with undesirable risk attributes from several perspectives

BEAR STEEPENING HURTS STOCK SELECTION

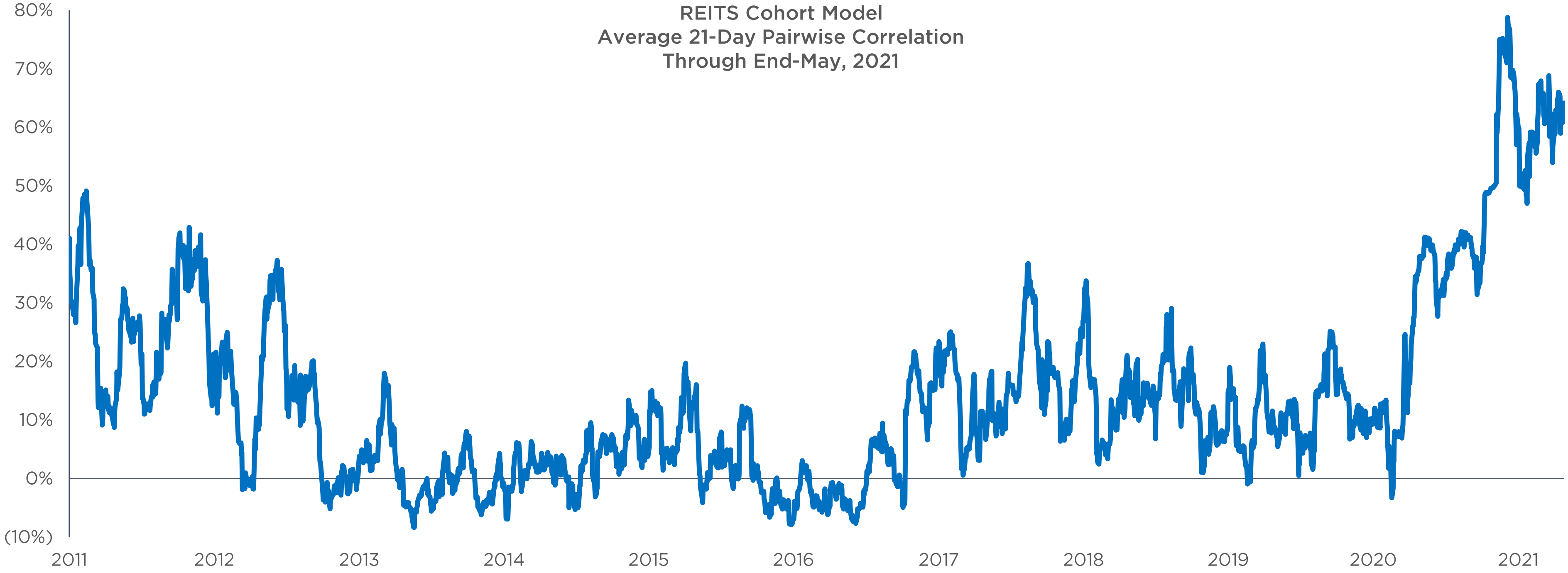
When the yield curve is steepening, the efficacy of our REITs model massively deteriorates, from a top vs. bottom quintile spread of 14.7% to only 2.1% when we have a bear steepening of the yield curve. Our view is that if the efficacy of our quant models dramatically changes under certain measurable macro conditions, and this is a measurable, consistent, and implementable impact that changes to the yield curve has on our model efficacy. Our judgment is that both fundamental and quantitative investors should take advantage of this by reducing gross exposure to REITS. If conditions are such that it is more challenging to pick winners from losers, than lowering your gross is prudent. Today, we have seen a pause in the back-up in the 10-year yield, but if we see a continued strong economy driving the 10-year yield higher without a commensurate move higher in the 2-year yield, this likely will mean our stock selection tool with REITS will be ineffective

Beta-Adjusted Average Monthly Return Spreads
Average Monthly Returns 2009-Present
For REITS

	REITs	
Macro Signal	**Signal Direction**	**Mean Q1-Q5 Spread**
Yield Curve	Bear Steepening	2.1%
Yield Curve	Not Bear Steepening	14.7%
Yield Curve	Difference	**(12.6%)**

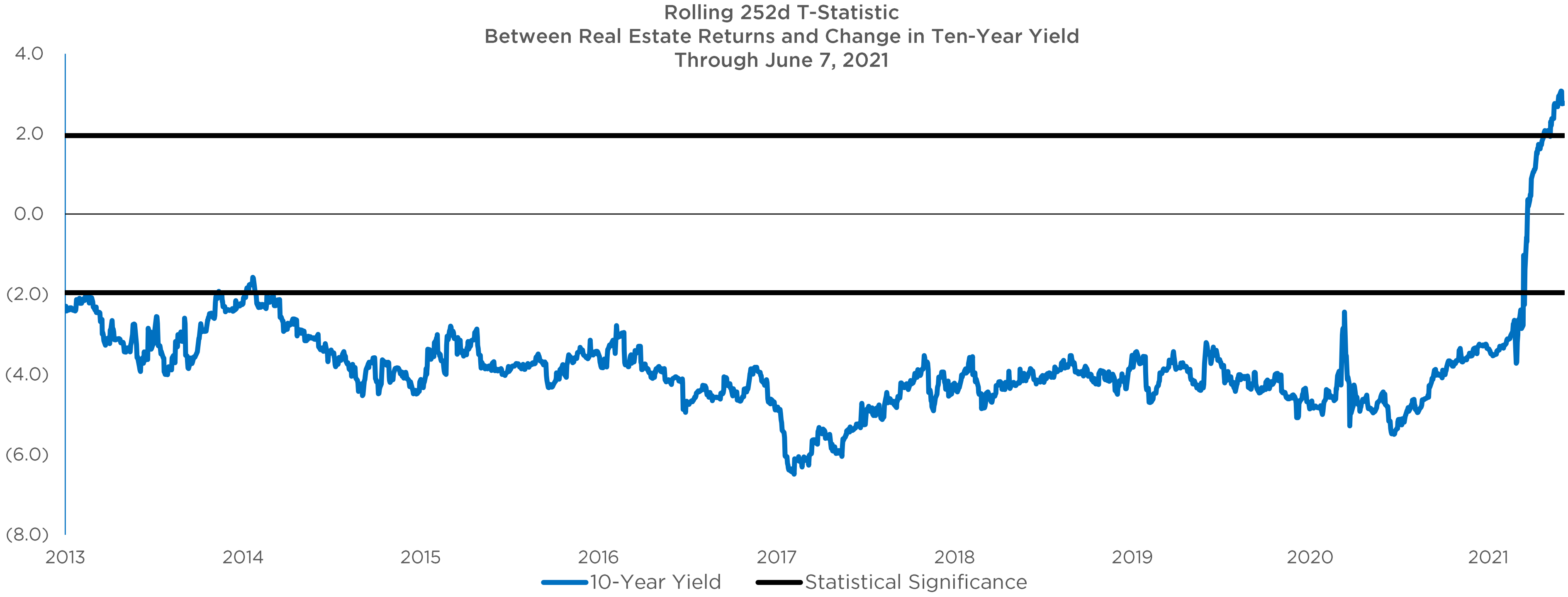
THE MODEL SIGNALS ARE HIGHLY CORRELATED

We analyzed all 21 of our quantitative models to see if signals have become increasingly correlated recently. The largest change in any of our models is the increased correlation of the signals in our REITS model. For REITs, we have a model comprised of eight signals to predict subsequent 18-month returns for stocks in that industry. There were sustained periods during our model development (2012-2017) where the average pairwise correlation of these signals was near zero (even briefly negative). However, right after the Pfizer vaccine announcement on November 9th of 2020, the average pairwise correlation of our REITs-model signals jumped to near 80% as REITs names rose indiscriminately. Fundamental managers who need to measure risks in the aggregate, even if they love each of their individual positions, should be mindful of signals where correlations have increased this dramatically



REITS' RELATIONSHIP TO RATES HAS CHANGED

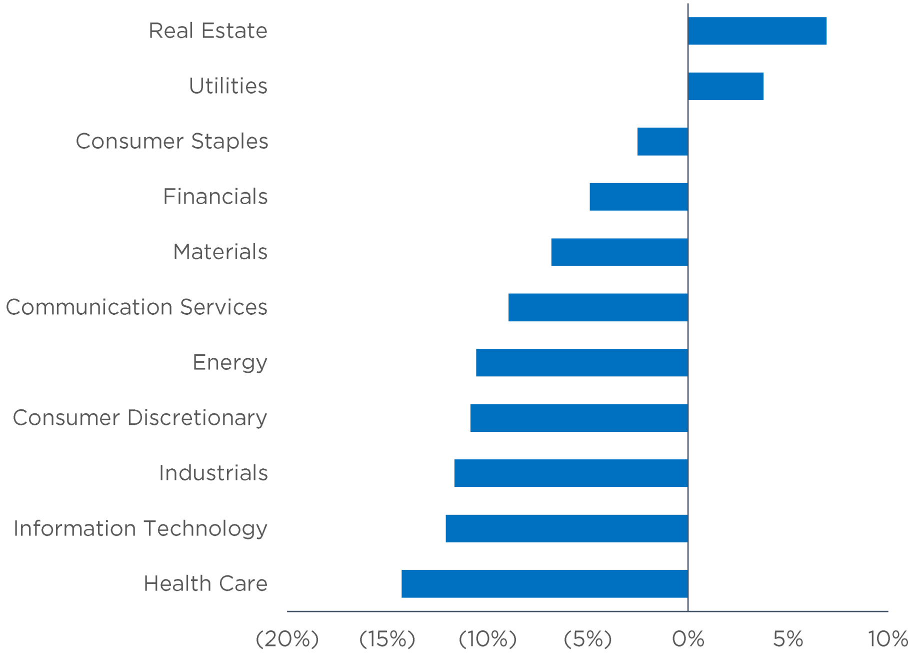
We analyzed the relationship between the REIT sector returns and changes in the 10-year yield. We found that historically REIT returns had a statistically significant NEGATIVE relationship, meaning when yield rose it was bad for REIT performance. However, since late in 2020, the relationship has reversed and is now positive and statistically significant. Investor's perception is that continued economic reopening is so important for many REITS that it entirely offsets the "yield / REIT" sensitivity that historically was meaningful. In our judgment, this will reverse back to the old relationship at some point over the next year



REITS HAVE TONS OF NEGATIVE ASYMMETRIC BETA

We analyzed stock performance during market drawdowns of 10% or more and noticed that some stocks have higher betas during market pullbacks – i.e., they act less defensively. The sector in the market with the most negative asymmetric betas in the last year is REITS (left chart).   The REITS stocks with the most negative asymmetric betas during market pullbacks of 10% or more are in the right exhibit

Average Increase (Decrease) in Median 252d Beta During SPX Drawdown of at least 10% Through June 7, 2021

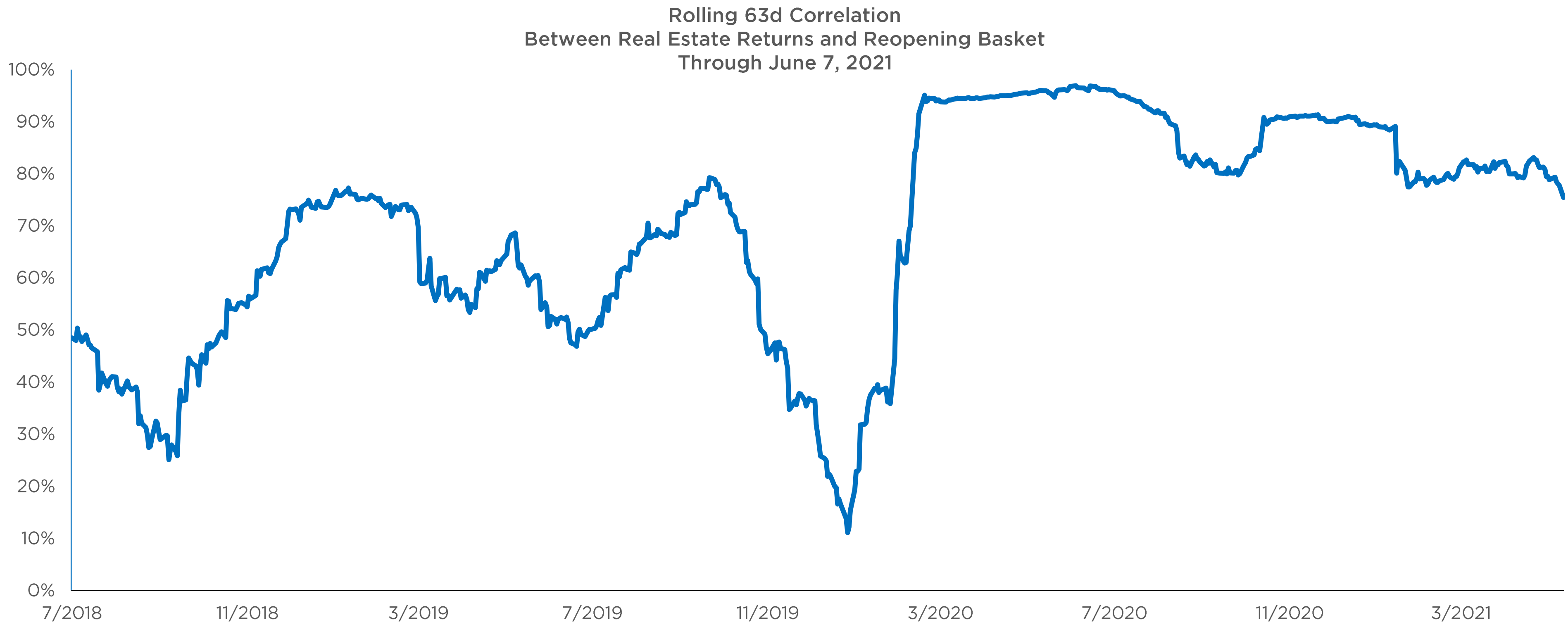


REITs with Median and Mean Beta Increases in Top Decile During SPX Drawdowns of at Least 10% Top 10 by Market Cap. June 7, 2021

Ticker	Company	Industry Group	Market Cap. (US$ Bil.)
PSA	Public Storage	Specialized REITs	50.96
SPG	Simon Property Group, Inc.	Retail REITs	44.02
EQR	Equity Residential	Residential REITs	29.72
AVB	AvalonBay Communities, Inc.	Residential REITs	29.57
EXR	Extra Space Storage Inc.	Specialized REITs	20.94
MAA	Mid-America Apartment Communities, Inc.	Residential REITs	19.02
ELS	Equity LifeStyle Properties, Inc.	Residential REITs	13.51
LSI	Life Storage, Inc.	Specialized REITs	7.99
HIW	Highwoods Properties, Inc.	Office REITs	4.97
ADC	Agree Realty Corporation	Retail REITs	4.61

REITS REOPENING CORRELATION WILL LIKELY CONTINUE TO WANE

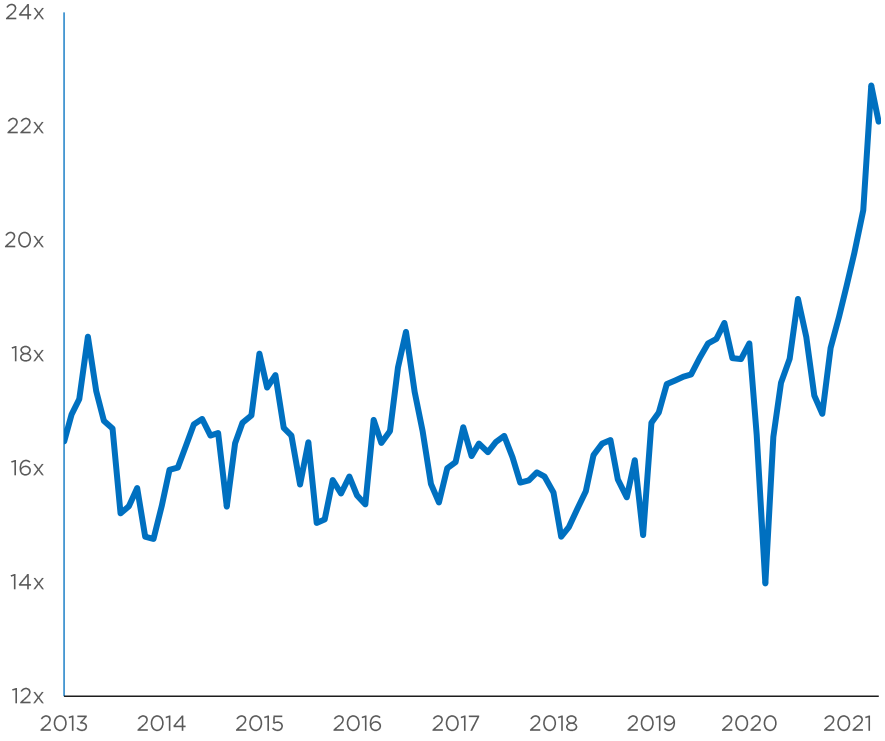
Reopening wasn't a phrase until summer of 2020 and probably won't be ever again at some point in later in 2022. But, for now, monitoring the relationship between stocks and "reopening" matters and the returns of REITS remain highly correlated to our reopening basket, although this relationship is slowly beginning to wane


Rolling 63d Correlation
Between Real Estate Returns and Reopening Basket
Through June 7, 2021

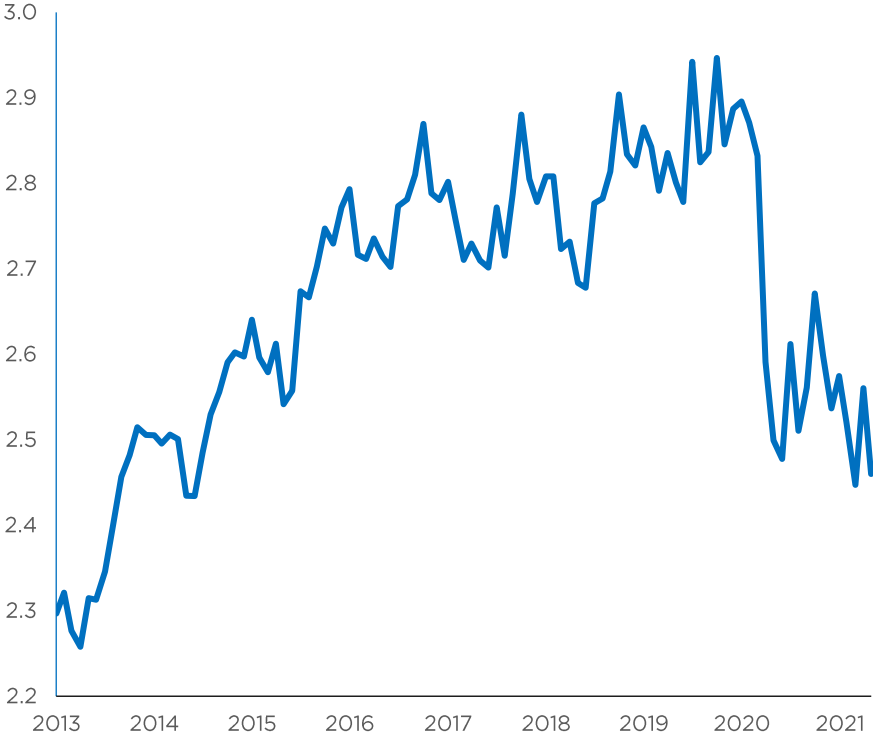
REITS ARE EXPENSIVE AND PROFITS ARE MUTED

The price-to-forward FFO for REITS is essentially at an all-time high (left chart). At the same time, expectations at 12-month forward FFO / share for REITS will be at the same levels achieved five-years ago (right chart). Basically, aggregate valuation and profitability are not attractive

Price to Estimated 1-Year Forward FFO Through End-May, 2021



Estimated 1-Year Forward FFO per Share Through End-May, 2021



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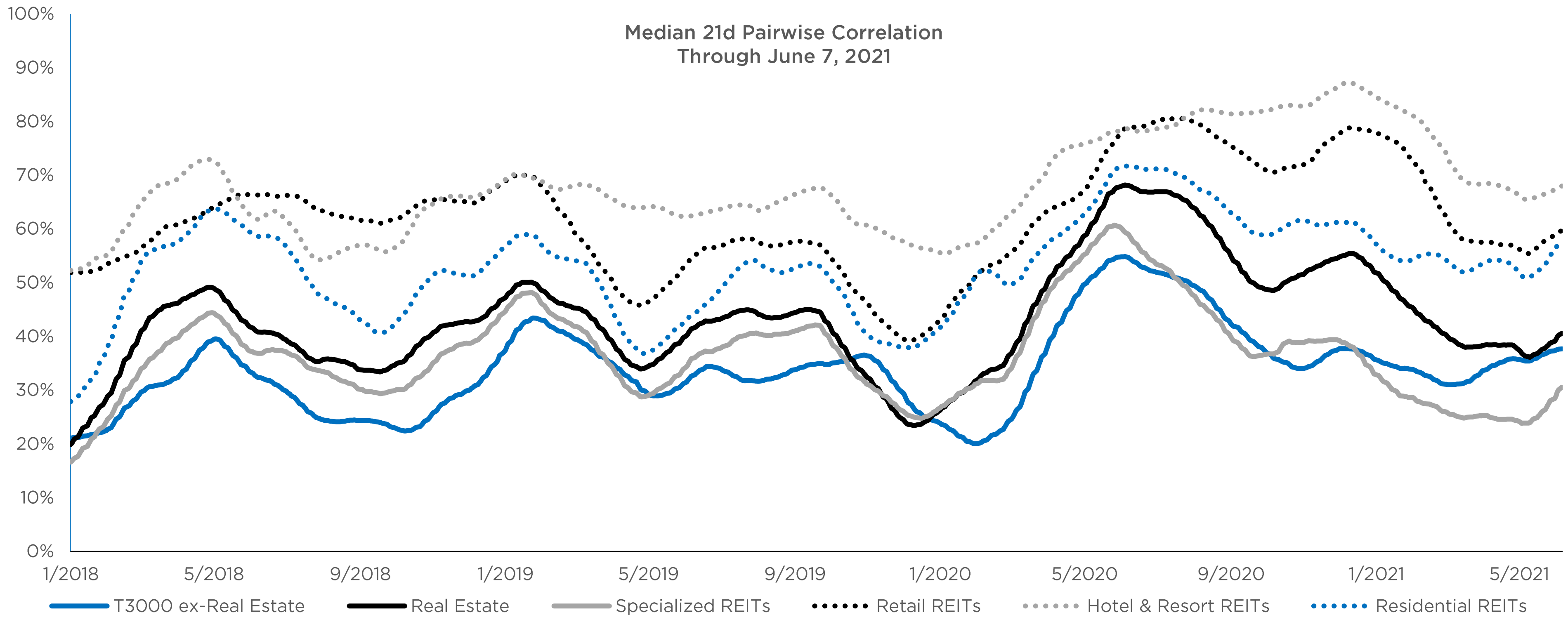
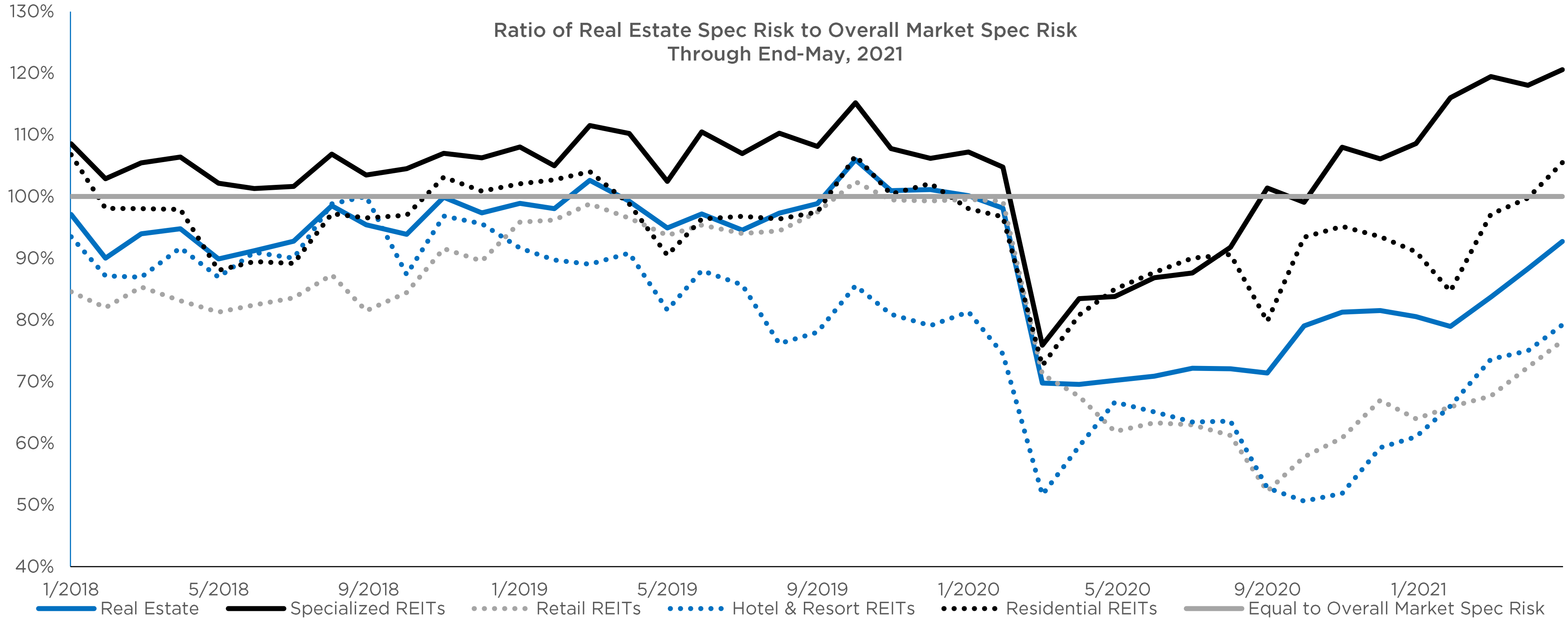
SPECIALTY ARE LESS CORRELATED THAN HOTELS AND RETAIL

We analyzed the intra-REIT industry return correlations over time. Specialized REITS (data centers and towers, etc.) consistently have lower intra-group correlation than hotel & resort REITS, where average pairwise correlations are hovering around 0.7



SPECIALTY MORE IDIOSYNCRATIC THAN “REOPENING” REITS

Below we show how much of the median’s stock return in each REIT sub-group can be explained by our proprietary seven factor model – equity market beta, two size factors (mega/large vs mid and mid vs. small/micro), style (growth vs. value), substance (quality vs. junk), liquidity, and momentum. We then compare the median stock within each REIT industry to the overall market. Specialty REITS are always more “company-specific” than the market, but have been increasingly so of late, whereas hotel and resort REITS and retail REITS are far more “macro”



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