Industry Specific Alpha Series

A League of Their Own

Batting for Returns in the REIT Industry – Part 1

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This month REITs (Real Estate Investment Trusts) have been separated from the GICS (Global Industry Classification Standard) Financial sector into a sector of their own. Even prior to the sector reclassification, investors have been attracted to REITs' strong performance and attractive yield. REITs differ from traditional companies in several important ways. Metrics that investors typically use to value or evaluate the attractiveness of stocks such as earnings yield or book-to-price are less meaningful for REITs. For active investors interested in understanding their REITs portfolio, an understanding of the relationship between REIT financial ratios and price appreciation is instructive. Is dividend yield relevant? What about Funds from Operations ("FFO"), one of the most widely used metrics in the REIT space? In this report, several metrics are examined that should be of interest to active investors.

- **The most effective metrics are those that identify how "cheap" a REIT is relative to its trading price.** The most promising valuation metrics were NAV to price (NAVP a measure of the intrinsic value of a REIT using net asset value or NAV), AFFO Yield (a proxy for a REITs cash flow) and Implied Capitalization Rate (Net Operating Income Yield). The annualized long-only active returns[1] of all three metrics were 5.95%, 6.78% and 6.35% respectively, all statistically significant at the 5% or 1% level (see Table 1).

- **Dividend Yield is a poor indicator for REITs selection.** While conventional wisdom suggests holding REITs for their yield, dividend yield is the worst performing valuation indicator we tested, with an annualized long-only active return of 0.95% (see Table 1). Investors may view the future growth prospects of high dividend yield REITs as poor, and also consider these stocks as likely candidates to cut future dividends.

- **Watch the level and direction of analyst consensus price target.** Analyst Upside (consensus price target divided by current price) and the 3-month change in consensus price target generated annualized long-only returns of 9.00% and 3.68% respectively (both significant at the 1% level). Price targets usually reflect an analyst's view on NAV[2].

- **In a rising interest rate environment, NAVP and Analyst Upside were the most promising metrics (see Table 5).** Investors should avoid high dividend yield REITs, as these stocks may be negatively impacted by higher interest expense due to their higher debt burden (compared to low yield stocks, see Figure 4).

- **A strategy that combined four metrics yielded an annualized long-only active return of 5.68% and information ratio (IR) of 0.91[3].**

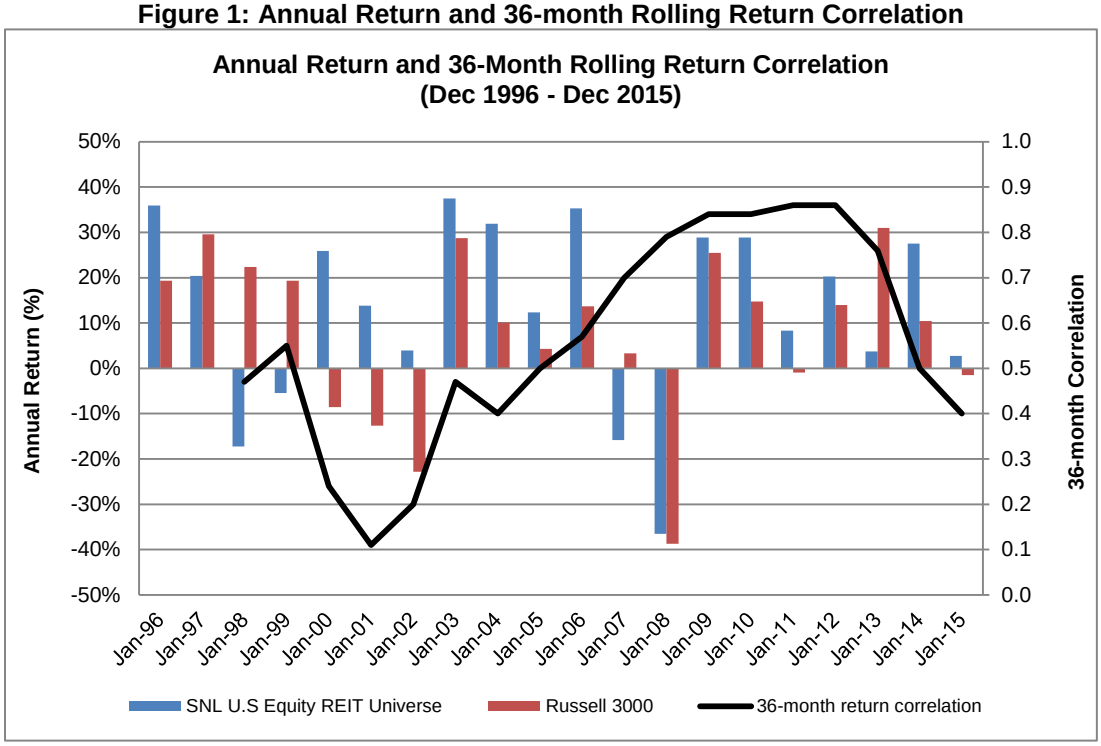
[1] Long-only active equal-weighted return is the equal-weighted return of the top 20% of stocks (based on a metric) minus the equal-weighted return to the Russell 3000 Equity REIT universe as described in Section 5.
[2] Price Direction and NAVP have a rank correlation of 0.85, statistically significant at the 1% level.
[3] Information ratio is a risk adjusted return metric and it is calculated as the annualized long-only active return divided by annualized standard deviation of those returns.

1. Introduction

Over the last five years, we have published several papers on the efficacy of industry specific metrics or factors. This research, our first on REITs, is based on fundamental and estimate data provided by SNL Financial, now part of S&P Global Market Intelligence.

Not only are GAAP metric less relevant for REITs than for other industries, the performance of REITs is often quite different from that of a broad equity market index. Figure 1 shows the annual return of the SNL U.S Equity index, the Russell 3000, and the 36-month rolling correlation between both indices (black line). Although the average over the entire period is 0.54, this average was driven up by the global financial crisis when stock returns were broadly driven by macro events. Prior to 2008, the average correlation was 0.38, around where it ended in October 2015.

Figure 1: Annual Return and 36-month Rolling Return Correlation



Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016

2. Factor Formulation and Description

In discussions with both sell side and buy side REIT analysts, we identified a number of key industry metrics used to determine the value of REITs. We provide a description of some of the more popular metrics we tested in Figure 2, grouped into four categories:

Value: Identifies attractive stocks based on valuation multiples specific to REITs.
Growth: Examines a REITs forecasted and actual growth in operating metrics.
Street Sentiment: Metrics that examine changes in sell side analyst sentiment.
Profitability & Quality: Efficiency of capital use and variability in operating performance.

The last column in Figure 2 is the order in in which the metric or factor was ranked – “A” for ascending and “D” for descending.

Figure 2: Definition of Equity Real Estate Investment Trust Metrics

	Metric	Description	Order
Valuation	SNL FFO Yield ("SFFOY")	Funds from Operations ("FFO") is one of the most widely followed metrics in the REIT industry. FFO is typically calculated as net income plus depreciation & amrotization minus gain on sale of real estate. This is a standardized FFO metric divided by price.	D
	Reported FFO Yield ("RFFOY")	FFO as reported by company divided by price.	D
	Adjusted FFO Yield ("AFFOY")	Adjusted FFO is a proxy for a REITs operating cashflow. It is calculated as FFO less recurring CAPEX and adjustments for "straight-lining" of rents.	D
	Implied Cap Rate (Net Operating Income / Total Enterprise Value)	The rate of return based on the income that a REITs portfolio of properties generates. This metric is independent of financing decisions taken by the REIT.	D
	Dividend Yield ("DivYld")	REITs with high dividend yields are expected to outperform those with low yields.	D
	FY1 FFO / Price ("FY1 FFOP")	This is one year forward consensus mean estimate FFO divided by price.	D
	FY1 AFFO / Price ("FY1 AFFOP")	This is one year forward consensus mean estimate AFFO divided by price.	D
	FY1 Dividend / Price ("FY1 DIVP")	This is one year forward consensus mean estimate dividend divided by price.	D
	NAV Estimate / Price ("NAVP")	The price of a REIT should reflect the value of its assets less liabilities.	D
Growth	Same Store Revenue Growth ("SSRG")	This metric looks at the percentage change in revenue for properties held for at least 1 year. It's a measure of organic revenue growth.	D
	Same Store NOI Growth ("SSNOIG")	This metric looks at the percentage change in net operating income (NOI) for properties held for at least 1 year. It's a measure of organic NOI growth.	D
	FY2 AFFO / FY1 AFFO ("FY2FY1AFFO")	Captures the expected growth in AFFO between consensus FY2 and FY1 estimates. REITs with higher expected growth are expected to outperform.	D
	FY2 FFO / FY1 FFO ("FY2FY1FFO")	Captures the expected growth in FFO between consensus FY2 and FY1 estimates. REITs with higher expected growth are expected to outperform.	D
	SNL FFO 1Y Growth ("SFFO1YG")	1 year growth in standardized actual FFO. REITs with strong growth metrics are expected to outperform their peers with weak growth metrics.	D
Street Sentiment	Analyst Upside (12-month target price / current price)	Measures whether a stock is trading at a discount or premium to analyst consensus price target.	D
	3-month Change in FY1 AFFO to Price ("Chg3MFY1AFFO")	Captures the direction of street sentiment. Stocks upgraded based on FY1 AFFO consensus estimate over the last 3-months are expected to outperform those that have been downgraded over the same period.	D
	3-month Change in FY1 FFO to Price ("Chg3MFY1FFO")	Stocks that have been upgraded (based on FY1 FFO) over the past 3 months are expected to outperform those that have been downgraded.	D
	3-month Change in NAV to Price ("Chg3MNAVP")	Indicator that captures the growth(reduction) in consensus estimate NAV over the last 3-months.	D
	3-month Change in Consensus Target Price ("Chg3MTP")	Metric that captures analyst sentiment change over the last 3-month using consensus target price.	D
	3-month Change in FY1 Revenue to Price ("Chg3MFY1REV")	Stocks that have been upgraded (based on FY1 REV) over the past 3 months are expected to outperform those that have been downgraded.	D
Profitability & Quality	SNL FFO Stability ("SFFOStab")	This metric is calculated as the most recent year-on-year change in FFO divided by the standard deviation of the change over the last 8 quarters. The metric favors REITs with lower FFO variability.	D
	Return on Invested Capital ("ROIC")	ROIC is a measure of how efficiently a REIT is using capital.	D
	FFO Divergence (Reported FFO / SNL FFO)	Metric that captures the level of aggressiveness used by REITs to calculate reported FFO.	A
	FFO PayOut Ratio (Dividend / FFO)	REITs are required to pay out at least 90% of taxable profits as dividends. This metric examines how much cash is retained in the business to finance growth.	A

2.1. Back-Test Results

Back-test factor results (see Section 5 for universe description) are displayed in Table 1 (3-month holding period results is shown in Appendix A). All long-only and long-short returns are equal-weighted and were determined using quintiles. The table includes:

- Start date (the date back-tests commenced for a given metric).
- Average count of stocks with data over the back-test horizon.
- Annualized long-only equal-weighted active return, information ratios and hit rate[4].
- Annualized equal-weighted long-short returns and average 1-month information coefficients (IC)[5].

Table 1: Equity REIT Metrics Performance Summary
Russell 3000 (Equity REITs): Start Date – October 2015

Metric	Start Date	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	1-month Information Coefficient (IC)
Valuation							
AFFO Yield	March 1999	47	6.78%**	0.60	56%	9.36%**	0.036***
Implied Capitalization Rate	March 1999	86	6.35%***	0.99	58%**	7.54%***	0.026**
NAVP	May 2001	108	5.95%**	0.66	64%***	10.15%**	0.048***
SNL FFO Yield	March 1999	94	4.96%*	0.44	58%**	6.60%*	0.023**
Reported FFO Yield	March 2000	108	4.50%*	0.45	58%**	5.90%	0.021**
FY1 AFFOP	May 2001	110	3.63%	0.39	55%	6.36%	0.020*
FY1 FFOP	Dec 1997	109	2.95%	0.30	54%	6.99%*	0.028**
FY1 DIVP	Oct 2007	117	2.02%	0.15	42%	3.73%	-0.013
Dividend Yield	Dec 1994	110	0.95%	0.12	50%	1.90%	-0.001
Growth							
SFFO1YG	Mar 2000	74	3.20%***	0.71	57%*	4.05%**	0.014
FY2FY1AFFO	May 2001	107	0.79%	0.14	51%	2.48%	0.017*
SSNOIG	June 1999	70	0.45%	0.09	50%	3.28%*	0.023**
FY2FY1FFO	Dec 1997	103	-0.35%	-0.06	53%	1.42%	0.015*
SSRG	June 2003	60	-0.52%	-0.10	48%	4.39%**	0.026**
Street Sentiment							
Analyst Upside	April 2004	110	9.00%***	0.76	70%***	14.46%***	0.062***
Chg3MTP	July 2004	108	3.68%***	0.82	63%****	7.63%**	0.038***
Chg3MNAVP	Aug 2004	103	1.98%	0.28	61%***	3.06%	0.040***
Chg3MFY1FFO	April 2004	112	1.22%	0.21	61%***	-0.61%	0.025***
Chg3MFY1AFFO	July 2001	113	0.27%	0.05	55%	-1.40%	0.022***
Chg3MFY1REV	Oct 2006	112	-0.67%	-0.12	49%	0.78%	0.027**
Profitability & Quality							
FFO PayOut Ratio	Mar 2000	104	3.42%***	0.69	60%**	5.73%***	0.027***
ROIC	June 2001	89	2.44%	0.33	53%	1.67%	0.001
SFFOStability	June 2000	88	1.14%	0.23	56%	0.87%	0.032***
FFO Divergence	Mar 2000	90	-1.57%	-0.31	45%	-0.34%	0.011

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.

Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

[4] Hit Rate is the count of monthly positive long-only active returns divided by the count of the entire monthly history.
[5] **Long-short return** is the equal-weighted return of the top 20% of stocks (based on a metric) minus the equal-weighted return of the bottom 20% of stocks, based on the same metric; **IC** is the rank correlation of the metric to forward stock return.

The most promising indicators are in the valuation category, with the first five listed metrics generating statistically significant 1-month long-only excess return and ICs. AFFO Yield, which is generally used as a proxy for cash flow yield had the best long-only excess return, with an annualized return of 6.78%. However, we would like to point out that the numerator of this metric (AFFO Yield) is not a standardized or audited number, and REITs use different methodologies in arriving at AFFO Yield. This makes it problematic comparing reported AFFO across REITs.

Many REIT investors would agree that the intrinsic value of a REIT should be a function of its net asset value ("NAV"). NAVP examines whether a REIT is trading below or above its intrinsic value. NAVP provides the strongest backtest results when performance is judged by annualized long-short return (10.15%) or IC (0.048). FFO is most probably the most commonly used metric to measure a REITs operating performance and both FFO based metrics in Table 1 demonstrated some degree of efficacy.

One surprising discovery was that dividend yield had no predictive power. While dividend yields may increase the attractiveness of REITs as an asset class, using a dividend strategy as the basis for stock selection is not effective. The annualized long only return to a dividend strategy is only 0.95% with a 50% hit rate. It is possible that investors are skeptical of the ability of high dividend yielding REITs to maintain dividends. Also note that, unlike the valuation metrics constructed from company reported trailing numbers, the equivalent forward estimate valuation metrics (indicators with the prefix FY1) were not effective as stock selection indicators.

Only four other metrics outside the valuation category have statistically significant annualized long-only excess returns. One of the more interesting metrics with predictive power is Analyst Upside - an indicator that measures a stock's upside or downside, using the distance between consensus target price and current trading price. When we test this metric across a broad based universe such as the Russell 3000, it has no predictive power. However, it is one of the strongest metrics when tested within the REITs universe.

Why is this so? One possible reason is that the way analysts arrive at price targets in the REITs industry is structurally different from the approach used in other industries. In the REITs industry, price targets are usually derived from NAV, which we found to be one of the most effective metrics in the valuation category. The long-short return correlation between NAVP and Analyst Upside is 0.85, supporting the link between analyst price target and NAV.

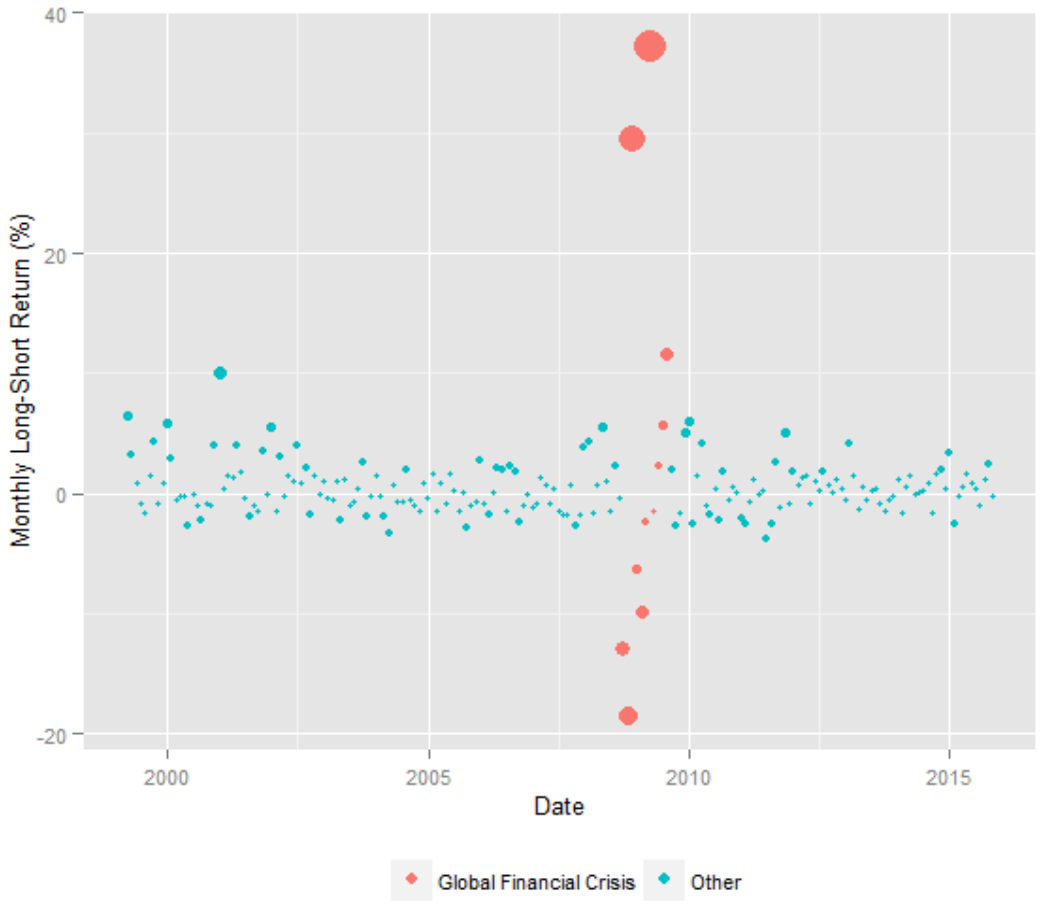
A few metrics (such as Chg3MNAVP and Chg3MFY1FFO) have statistically significant ICs and hit rates, but weak long-only and long-short excess returns. While the IC and hit rates are not materially impacted by extreme or large stock returns, long-only and long-short returns are. In the next section, we will review the impact of extreme stock returns on quintile portfolio performance.

2.2. Impact of the Global Financial Crisis on Quintile Returns

The last global financial crisis was precipitated by the collapse in housing prices which started in late 2007. Figure 1 shows the impact of the crisis on the performance of REITs – the SNL U.S Equity REIT index was down by 16% and 37% in 2007 and 2008 respectively, before rallying by 29% in 2009 and 2010.

We show the impact of the crisis on the long-short return performance of one metric, SNL FFO Yield in Figure 3. The returns in light red ("Global Financial Crisis" label) are for the months between October 2008 to August 2009, which was characterized by extreme returns and high volatility. Overall, these extreme returns had some impact on quintile portfolio performance for all the metrics we tested.

Figure 3: SNL FFO Yield - Dispersion of Monthly Long-Short Returns March 1999 – October 2015



Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

In Table 2 we show only metrics whose performance characteristics changed significantly when periods associated with the crisis are excluded (the impact of the global financial crisis on all factors is detailed in Appendix B). Metrics that look at the direction of analyst estimates now show some predictive power. All four performance indices (long-only active return, long-short return, hit rate and IC) for Chg3MNAVP, which examines the change in 3-month NAV divided by price, are statistically significant at the 1% level.

While the level of analyst consensus FFO (FY1 FFO/Price) was not predictive of future stock performance (see Table 1), the directional change appears to show some degree of stock return predictability. Table 2 also shows that stocks with less volatility in standardized FFO (SFFO Stability) outperform those with more variability, suggesting that investors reward REITs with stable FFO streams.

Table 2: Equity REITs Metrics: Performance Summary - Russell 3000 (Equity REITs): Start Date – October 2015 (Excluding Oct 2008 – Aug 2009)

Metric	Start Date	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	1-month information Coefficient (IC)
Street Sentiment							
Chg3MNAVP	Aug 2004	104	3.56%***	0.95	62%***	6.07%***	0.042***
Chg3MFY1FFO	April 2004	114	2.45%**	0.66	62%***	3.05%	0.029***
Chg3MFY1AFFO	July 2001	115	2.16%**	0.64	57%	3.75%**	0.027***
Profitability & Quality							
SFFO Stability	June 2000	88	2.60%***	0.68	58%**	3.13%**	0.033***

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

3. Combining the Metrics in a Multi-Factor Framework

While the focus of this paper is identifying how various metrics may be applied within a REITs universe, we understand that many of our readers would be interested in how they can combine the metrics we have so far identified into a more robust strategy.

We would like to note, at this point, that our work is ongoing. We have not yet explored some of the data sets available to us, primarily detail and aggregate property level data, but also leverage and price trend indicators. So the approach we discuss in the next section is primarily to determine if there is value in combining the various metrics we have discussed so far.

3.1. Factor Selection and Correlation

Our factor selection process was driven by performance, coverage, correlation and diversity. We selected one metric each from our four categories. The rank correlation between the four metrics is displayed in Table 3. Three of the four correlation coefficients are not statistically significant, except for the coefficient between FFO PayOut Ratio and SFFO1YG, which is significant at the 10% level.

Table 3: Factor Rank Correlation Matrix (Aug 2004 – Oct 2015)

	NAVP	Chg3MFY1AFFO	SFFO1YG	FFO PayOut Ratio
NAVP	1			
Chg3MFY1AFFO	-0.10	1		
SFFO1YG	0.00	0.00	1	
FFO PayOut Ratio	-0.04	0.02	0.16*	1

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

We also required that a stock had values for at least 2 metrics before it was ranked in the multi-factor strategy approach. All the four metrics were equal-weighted.

3.2. Strategy Performance

The performance of the multi-factor strategy ("REITs Strategy"), including the underlying metrics is shown in Table 4. All the performance metrics of the REITs Strategy's (first row of the table) are statistically significant at the 10% level or better.

Although NAVP has larger annualized long-only and long-short returns[6] (compared to the REIT Strategy), the REIT Strategy has an information ratio of 0.91 that is about 57% larger than NAVP's (0.58). It is worth pointing out that the long-short return of the REITs Strategy comes from both the long and short portfolios, suggesting that the REITs Strategy may be beneficial to both long-only and long-short investors.

Table 4: Performance Summary - Russell 3000 (Equity REITs): August 2004 – October 2015

Metric	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	Hit Rate (Long-Short Return)	1-month information Coefficient (IC)
REITs Strategy	113	5.68%***	0.91	59%*	9.56%***	67%***	0.051***
NAVP	114	5.73%*	0.58	60%**	10.55%**	64%***	0.047***
FFO PayOut Ratio	106	3.53%**	0.67	61%***	5.90%***	60%**	0.025**
Chg3MFY1AFFO	114	1.62%	0.27	55%	2.79%	53%	0.031***
SFFO1YG	89	2.83%**	0.64	54%	4.97%**	56%	0.017

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

Given the benefit we observe from this simple four factor combination, we expect that a more thorough approach to factor selection and combination will lead to improved performance metrics.

[6] REITs Strategy has the highest annualized long-only return and long-short return when we exclude observations from the GFC. See Appendix C for details.

4. Impact of Rising Interest Rates on Factor Performance

Investors generally assume that REITs do well in a low interest rate environment (due to their high dividend yield and bond like characteristics) and do poorly in a high interest rate environment (dividend yield becomes less attractive as bond yields rise)[7]. This relationship played out in May 2013 ("taper tantrum") when the Chairman of the Federal Reserve ("Fed") suggested that the Fed would start slowing its bond purchases later in the year; The SNL U.S. Equity REIT index dropped by almost 6% that month, while the Russell 3000 was up by more than 2%. Over the next three months, the SNL U.S. Equity REIT index dropped by another 7% while the Russell 3000 was up by 71 basis points.

Should there be a replay of the taper tantrum when the Fed begins its rate hike, which REIT strategies are likely to outperform and conversely, likely to underperform?

For this analysis, we looked at the performance of all our metrics during the last Fed rate hike, which lasted from June 2004 – August 2006. We understand that this is a short window to measure performance, but we hope to be able to at least get some insights as to which metrics may be helpful in a rate increase scenario. We detail the results for a few metrics in Table 5 (see Appendix D for results on all the metrics).

Table 5: Factor Performance in Rising Interest Rate Regime:
Russell 3000 (Equity REITS)
June 2004 – August 2006

Metric	Average Count	Annualized Long-Only Active Return	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	1-month Information Coefficient (IC)
NAVP	102	6.02%***	63%	10.59%***	0.076***
Dividend Yield	111	-1.79%	44%	-5.73%	-0.058**
Analyst Upside	96	7.88%***	85%***	14.55%***	0.099***
FFO Pay Out Ratio	100	1.05%	56%	6.16%*	0.048*

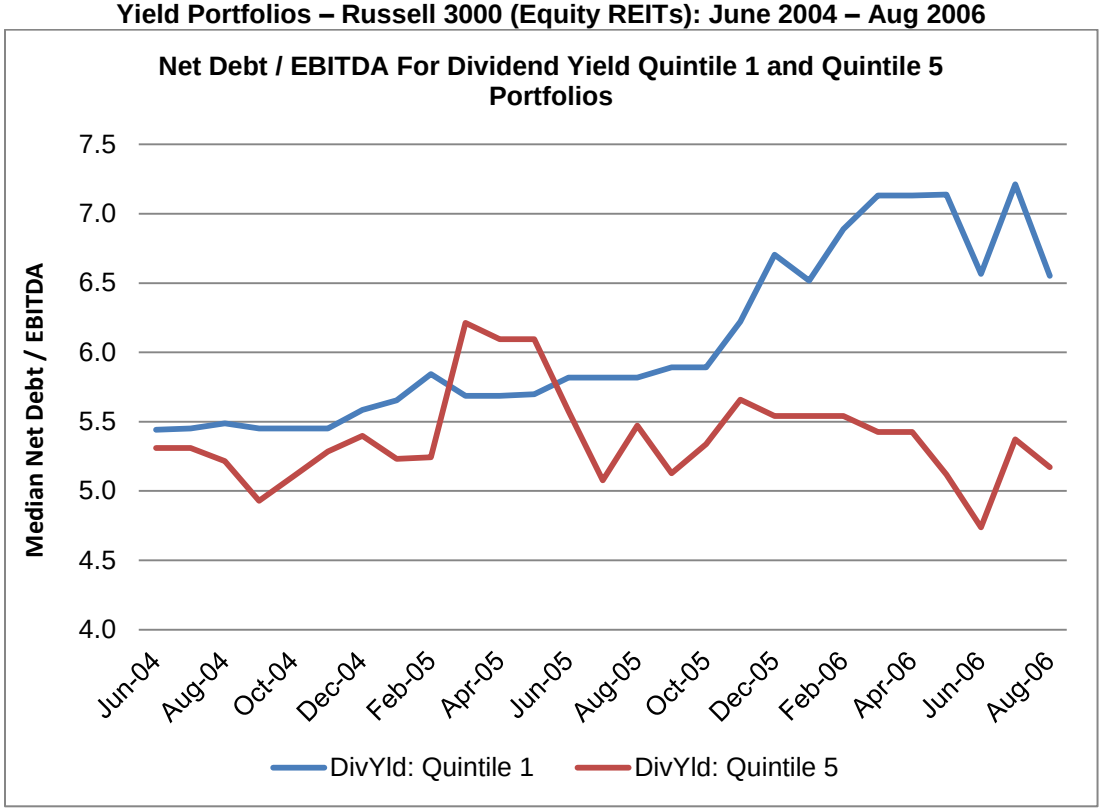
*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

In a rising interest rate environment, NAVP and Analyst Upside are the best metrics across our entire factor set. Both metrics have long-only active return, long-short return, IC and hit rates that are statistically significant at the 1% level. While the returns for Dividend Yield are not significant, its IC is statistically significant, although not in the expected direction. This suggests that high dividend yield stocks are punished when interest rates are rising. One possible reason for this scenario may be that high dividend yield stocks are also highly levered, and rising interest rates will lead to a jump in interest expense. Figure 4 seems to support this narrative, as it indicates that high dividend yield REITs generally carry more

[7] While we have not studied this relationship, we would like to point out that the last time interest rates were rising (June 2004 – August 2006), the SNL U.S Equity REIT index returned 75%, well ahead of the Russell 3000's 19%.

debt relative to EBITDA (compared to low dividend yield REITs[8]). It is also worth pointing out that the annualized active return to the ***short portfolio*** (-5.11%) for FFO Payout Ratio (a portfolio of stocks that pay out most of their FFO as dividends) is statistically significant at the 1% level.

Figure 4: Time Series Median Net Debt / EBITDA for Quintile 1 and Quintile 5 Dividend Yield Portfolios – Russell 3000 (Equity REITs): June 2004 – Aug 2006



Source: S&P Global Market Intelligence Quantamental Research. Data as at 07/31/2016

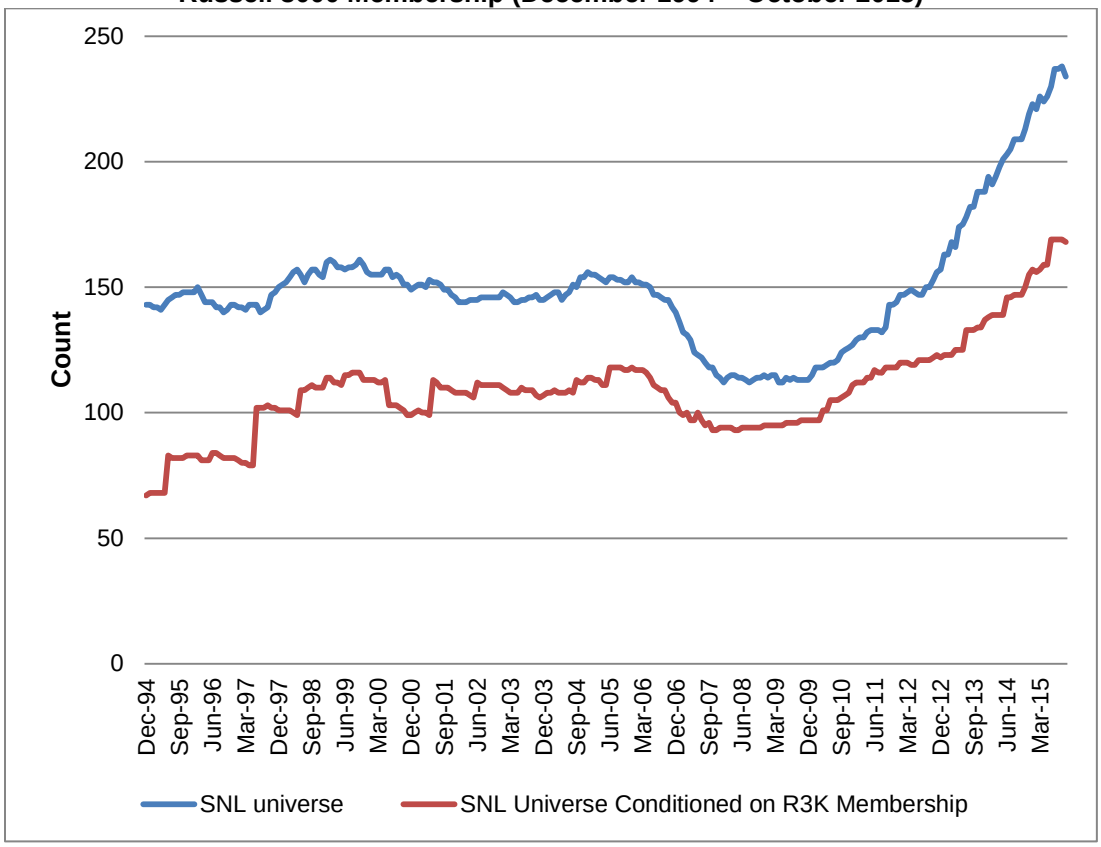
5. Universe

We started with all the securities in the SNL Corporate North America Master File. We then required that the property "Investment Focus" and "Elected REIT Status" fields be set to "equity" and "1" respectively to ensure that we were capturing equity securities that had elected "REIT status". We used the "Month REIT Status Established" and "Year REIT Status Established" fields to determine the month and year REIT election occurred (we assumed election occurred prior to January 1995 where both fields were missing). Finally, we required membership in the Russell 3000 (to address issues with size and liquidity) before we included a security in our final universe.

The time series count for the SNL Universe and the SNL Universe conditioned on Russell 3000 membership (which was used for all our tests) is shown in Figure 5. The universe conditioned on Russell 3000 membership averaged 109 securities and was 168 as at the end of October 2015.

[8] The difference between the median net debt / ebitda multiple of quintile 1 and quintile 5 dividend yield stocks is significant at the 1% level, using the Wilcoxon Test.

Figure 5: Time Series Count of SNL Universe and SNL Universe Conditioned on Russell 3000 Membership (December 1994 – October 2015)



Source: S&P Global Market Intelligence Quantamental Research. Data as at 07/31/2016

6. Factor Construction Methodology

One consistent theme we heard during our discussions with analysts was that REITs were not "homogenous"; fundamentals can differ significantly across property focus types or sub-industries. This difference in fundamentals across sub-industries is visible in Table 6 where we show the aggregate[9] Funds from Operations ("FFO") / Total Revenue ratio (%) for five sub-industries over the last five years, including the average over the same period. The 5-year average for the self-storage sub-industry is three times that of the Hotel sub-industry.

[9] Sub-industry aggregates are size weighted

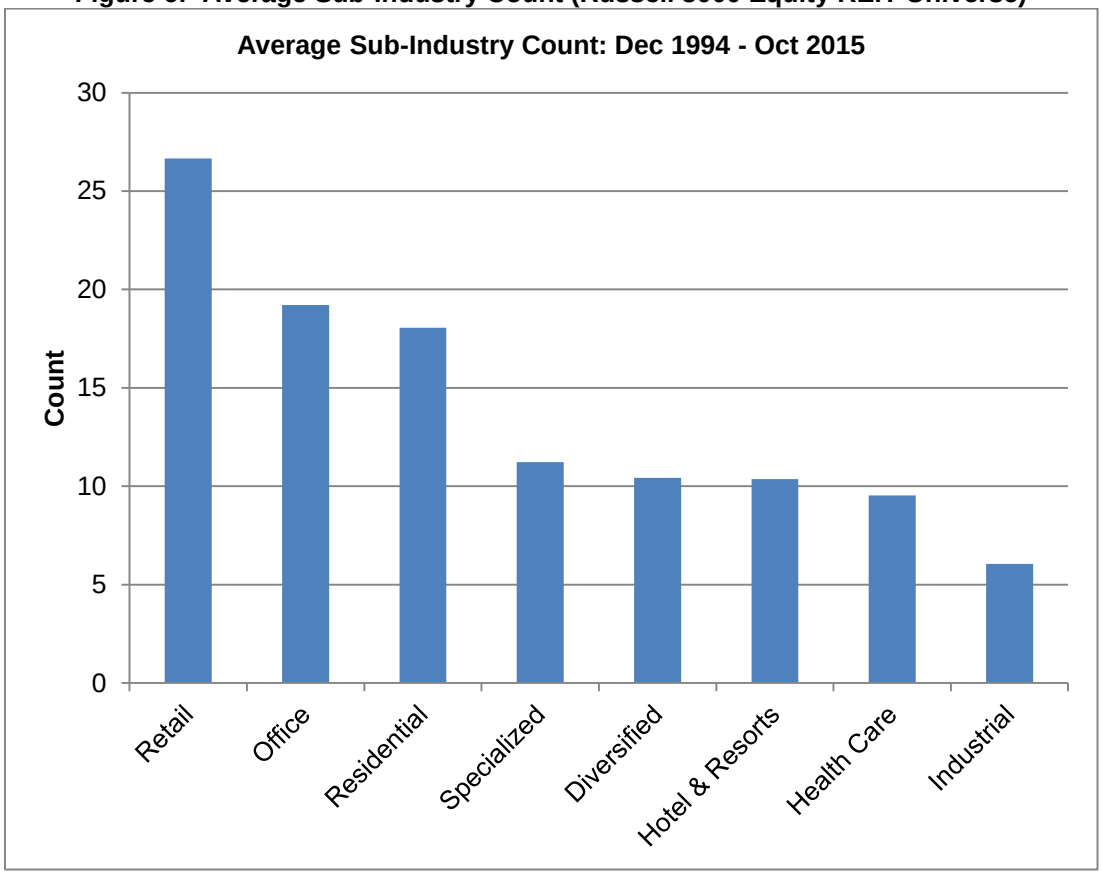
Table 6: FFO / Total Revenue (%)

Property Focus / Sub-Industry	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015	Average
SNL U.S. REIT Healthcare	44	47	46	46	35	44
SNL U.S. REIT Hotel	13	14	18	21	21	18
SNL U.S. REIT Industrial	31	29	50	49	54	42
SNL U.S. REIT Manufactured Homes	25	28	26	29	30	28
SNL U.S. REIT Self-storage	57	50	55	55	54	54

Source: S&P Global Market Intelligence Quantamental Research. Data as at 07/31/2016

Each analyst we spoke with had a different way of dividing a REITs universe into different cohorts. Our goal was to have a reasonable number of securities with similar property focus in each cohort. We settled on the 8 GICS Real Estate sub-industries as the basis for our universe as it served our purpose. The average count of the number of REITs for each of the 8 sub-industries is shown in Figure 6.

Figure 6: Average Sub-Industry Count (Russell 3000 Equity REIT Universe)



Source: S&P Global Market Intelligence Quantamental Research. Data as at 07/31/2016

Each metric we tested was constructed by first calculating Z-Scores at the sub-industry level, then re-ranking across the REIT universe using the sub-industry Z-Scores. Metrics were lagged 90 days from the period end date.

7. Data

The fundamental and estimate data for this research was from SNL Financial's Real Estate database. SNL Financial ("SNL") is now part of S&P Global Market Intelligence and contains industry specific content. As of September 2015, SNL's Real Estate database covered over 1,000 companies in 46 countries. In addition to fundamental and estimate data, SNL collects information on over 80,000+ individual properties. Some of the data items in the detail property level data set include tenant information (top tenant contribution to revenue, publicly traded tenant issuer credit rating from the credit agencies), top markets contribution to revenue, and occupancy rate. Another interesting data set within the Real Estate database is demographic and unemployment information, which can be mapped to the location of each REITs property.

8. Conclusion

REITs are one of the most challenging asset classes to model as their underlying operations are different from companies in other (non-real estate) sectors. Consequently, metrics that investors typically use to value the attractiveness of stocks such as earnings yield are less meaningful for REITs. In this paper, we examined various metrics that could help investors pursing an active strategy select stocks within the REITs industry. Our analysis suggests that metrics that capture the intrinsic value of REITs such as NAVP are more useful than metrics such as dividend yield. A multi-factor approach, such as the four-factor strategy demonstrated in this paper, provided stronger results than any single metric explored. Our research is not yet complete and in subsequent reports, we will look at the efficacy of fundamental and non-fundamental metrics not discussed in this report. These new metrics will include those that look at leverage, property level metrics and credit related indicators.

Appendix A

Equity REIT Metrics: 3-month Return Horizon
Performance Summary - Russell 3000 (Equity REITs)

Metric	Start Date	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	3-month information Coefficient (IC)
Valuation							
AFFO Yield	March 1999	47	6.04%**	0.47	56%	7.35%*	0.042**
Implied Cap Rate	March 1999	86	3.98%***	0.72	62%***	4.10%**	0.020
NAVP	May 2001	108	3.42%*	0.35	61%***	5.93%*	0.042**
SNL FFO Yield	March 1999	94	3.03%*	0.32	53%	3.75%	0.015
Reported FFO Yield	March 2000	108	3.43%	0.31	56%*	4.67%	0.019
FY1 AFFOP	May 2001	110	3.27%	0.30	50%	4.74%	0.008
FY1 FFOP	Dec 1997	109	1.82%	0.16	52%	3.48%	0.016
FY1 DIVP	Oct 2007	117	2.11%	0.16	44%	1.57%	-0.035
Dividend Yield	Dec 1994	110	-0.74%	-0.10	45%*	-1.20%	-0.022
Growth							
SFFO1YG	Mar 2000	74	2.85%***	0.61	58%**	3.95%***	0.027**
FY2FY1AFFO	May 2001	107	-0.15%	-0.03	50%	2.05%	0.024*
SSNOIG	June 1999	70	0.27%	0.05	54%	2.75%***	0.037***
FY2FY1FFO	Dec 1997	103	-1.48%	-0.27	42%**	0.26%	0.016
SSRG	June 2003	60	-0.75%	-0.11	44%	2.71%*	0.031**
Street Sentiment							
Analyst Upside	April 2004	110	2.91%	0.22	56%	5.98%*	0.061***
Chg3MTP	July 2004	108	0.62%	0.11	50%	3.60%*	0.050***
Chg3MNAVP	Aug 2004	103	1.62%	0.27	57%*	3.71%	0.063***
Chg3MFY1FFO	April 2004	112	1.22%	0.22	63%***	0.54%	0.035**
Chg3MFY1AFFO	July 2001	113	-0.06%	-0.01	54%	-0.11%	0.024*
Profitability & Quality							
FFO PayOut Ratio	Mar 2000	104	3.46%***	0.62	60%**	6.19%***	0.049***
ROIC	June 2001	89	1.69%	0.24	49%	0.57%	-0.006
SFFO Stability	June 2000	88	1.50%	0.30	58%*	2.84%*	0.048***
FFO Divergence	Mar 2000	90	-1.23%	-0.25	46%	-0.13%	0.015

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Standard errors for p-values calculated using the Newey-West estimator. Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

Appendix B

Equity REIT Metrics: Performance Summary - Russell 3000 (Equity REIT): Start Date – October 2015 (Excluding Oct 2008 – Aug 2009)

Metric	Start Date	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	1-month information Coefficient (IC)
Valuation							
AFFO Yield	March 1999	48	3.55%**	0.59	54%	4.49%**	0.032**
Implied Cap Rate	March 1999	86	4.13%***	0.94	56%	4.19%**	0.020*
NAVP	May 2001	109	4.43%***	0.95	64%***	7.18%***	0.050***
SNL FFO Yield	March 1999	94	3.66%***	0.72	59%**	4.79%***	0.024**
Reported FFO Yield	March 2000	108	2.94%**	0.61	58%*	3.34%*	0.020**
FY1 AFFOP	May 2001	111	2.15%*	0.47	55%	2.96%	0.018
FY1 FFOP	Dec 1997	110	1.40%	0.25	53%	4.07%*	0.026**
FY1 DIVP	Oct 2007	120	-0.75%	-0.14	43%	-1.41%	-0.014
Dividend Yield	Dec 1994	110	0.15%	0.03	50%	-0.08%	-0.004
Growth							
SFFO1YG	Mar 2000	74	2.64%**	0.64	57%*	3.49%*	0.015
FY2FY1AFFO	May 2001	108	0.74%	0.22	50%	3.02%**	0.016*
SSNOIG	June 1999	70	1.17%	0.24	50%	3.10%*	0.025**
FY2FY1FFO	Dec 1997	104	-0.16%	-0.04	52%	1.24%	0.013*
SSRG	June 2003	60	0.03%	0.00	49%	4.28%**	0.029**
Street Sentiment							
Analyst Upside	April 2004	112	5.86%***	1.40	70%***	9.18%***	0.060***
Chg3MTP	July 2004	110	3.16%***	0.94	63%***	5.49%***	0.035***
Chg3MNAVP	Aug 2004	104	3.56%***	0.95	62%***	6.07%***	0.042***
Chg3MFY1FFO	April 2004	114	2.45%**	0.66	62%***	3.05%	0.029***
Chg3MFY1AFFO	July 2001	115	2.16%**	0.64	57%	3.75%**	0.027***
Chg3MFY1REV	Oct 2006	113	0.96%	0.24	49%	5.92%***	0.034***
Profitability & Quality							
FFO PayOut Ratio	Mar 2000	105	2.50%**	0.61	59%**	4.58%***	0.027***
ROIC	June 2001	89	2.45%**	0.63	52%	2.84%*	-0.001
SFFO Stability	June 2000	88	2.60%***	0.68	58%**	3.13%**	0.033***
FFO Divergence	Mar 2000	90	-0.34%	-0.09	44%	-0.29%	0.012

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

Appendix C

Performance Summary - Russell 3000 (Equity REIT):
August 2004 – October 2015 (Excluding Oct 2008 – Aug 2009)

Metric	Average Count	Annualized Long-Only Active Return	Annualized Information Ratio (Long Only Active Return)	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	Hit Rate (Long-Short Return)	1-month information Coefficient (IC)
REITs Strategy	114	4.69%***	1.15	59%*	9.09%***	68%***	0.051***
NAVP	115	3.90%**	0.72	61%**	6.92%***	65%***	0.050***
FFO PayOut Ratio	107	2.13%	0.50	61%**	4.27%**	60%**	0.025**
Chg3MFY1AFFO	116	1.02%	0.25	53%	2.05%	53%	0.030***
SFFO1YG	89	1.91%	0.49	55%	4.26%**	54%	0.019

*** Statistically significant at 1% level; ** statistically significant at 5% level; * statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

Appendix D

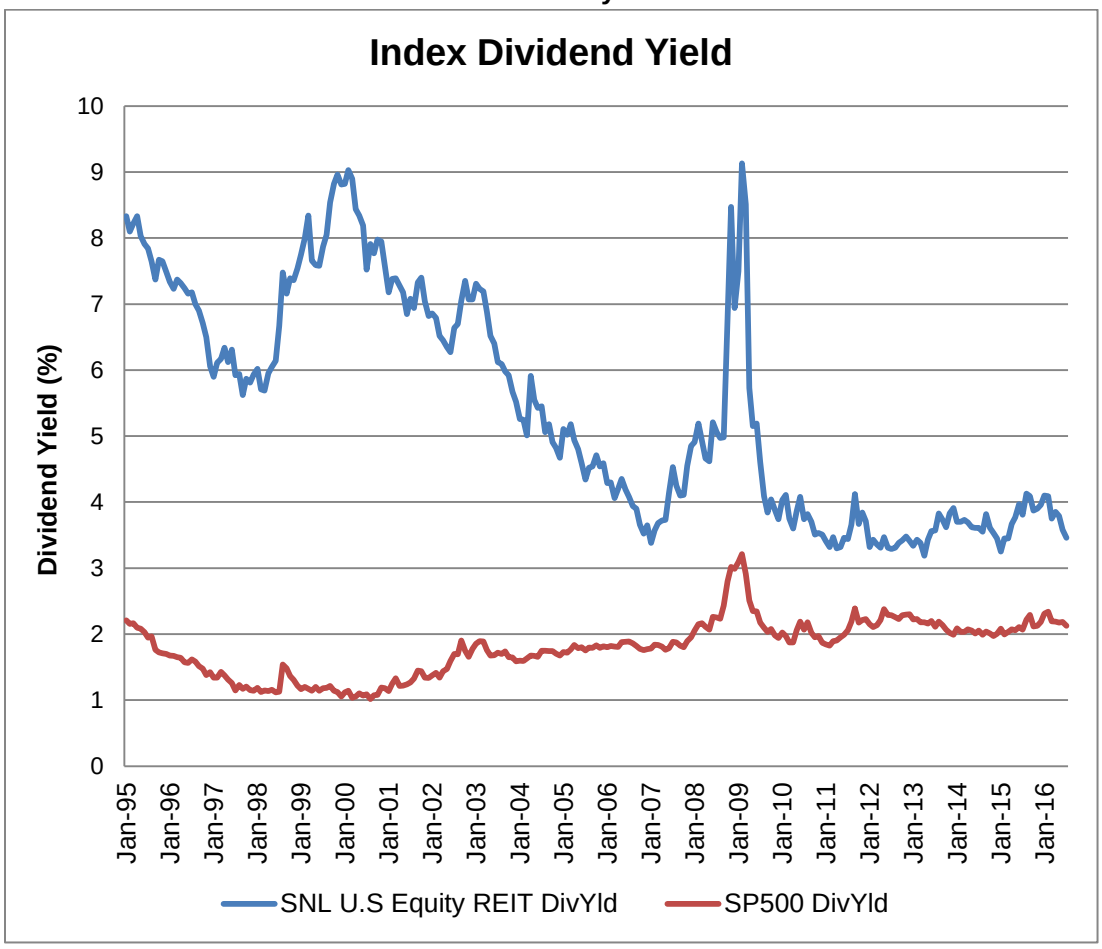
Factor Performance in Rising Interest Rate Regime:
Russell 3000 (Equity REIT)
June 2004 – August 2006

Metric	Start Date	Average Count	Annualized Long-Only Active Return	Hit Rate (Long-Only Active Return)	Annualized Long-Short Return	1-month information Coefficient (IC)
Valuation						
Implied Cap Rate	June 2004	68	-1.38%	44%	-6.77%*	-0.033
NAVP	June 2004	102	6.02%***	63%	10.59%***	0.076***
SNL FFO Yield	June 2004	92	-1.08%	44%	-0.30%	-0.005
Reported FFO Yield	June 2004	108	-3.20%*	44%	-2.60%	-0.017
FY1 AFFOP	June 2004	102	-1.21%	44%	-2.91%	-0.023
FY1 FFOP	June 2004	104	2.25%	59%	4.24%	0.015
Dividend Yield	June 2004	111	-1.79%	44%	-5.73%	-0.058**
Growth						
SFFO1YG	June 2004	82	-1.03%	37%	-0.90%	0.005
FY2FY1AFFO	June 2004	98	1.96%	56%	2.15%	0.021
SSNOIG	June 2004	66	0.32%	56%	-1.44%	0.006
FY2FY1FFO	June 2004	102	-2.64%	37%	-2.18%	-0.001
SSRG	June 2004	54	2.40%	48%	5.36%	0.031
Street Sentiment						
Analyst Upside	June 2004	96	7.88%***	85%***	14.55%***	0.099***
Chg3MTP	Aug 2004	91	0.25%	60%	1.59%	-0.003
Chg3MNAVP	June 2004	103	1.52%	52%	2.10%	0.020
Chg3MFY1FFO	June 2004	101	2.24%	56%	2.78%	0.044*
Chg3MFY1AFFO	June 2004	99	1.15%	52%	1.20%	0.018
Profitability & Quality						
FFO PayOut Ratio	June 2004	100	1.05%	56%	6.16%*	0.048*
ROIC	June 2004	66	4.26%*	63%	2.95%	-0.004
SFFO Stability	June 2004	83	2.29%	70%*	7.58%***	0.047***
FFO Divergence	June 2004	88	2.01%	48%	3.15%	0.026

*** Statistically significant at 1% level; ** statistically significant at 5% level; ** statistically significant at 10% level.
Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 07/31/2016.

Appendix E

Dividend Yield Comparison: SNL U.S Equity REIT Index vs S&P 500
Jan 1995 – July 2016



Source: S&P Global Market Intelligence Quantamental Research. For all exhibits, all returns and indices are unmanaged, statistical composites and their returns do not include payment of any sales charges or fees an investor would pay to purchase the securities they represent. Such costs would lower performance. It is not possible to invest directly in an index. Past performance is not a guarantee of future results. Data as at 08/31/2016.

Our Recent Research

August 2016: Mergers & Acquisitions: The Good, the Bad and the Ugly (and how to tell them apart)

In this study we show that, among Russell 3000 firms with acquisitions greater than 5% of acquirer enterprise value, post-M&A acquirer returns have underperformed peers in general. Specifically, we find that:

- Acquirers lag industry peers on a variety of fundamental metrics for an extended period following an acquisition.
- Stock deals significantly underperform cash deals. Acquirers using the highest percentage of stock underperform industry peers by 3.3% one year post-close and by 8.1% after three years.
- Acquirers that grow quickly pre-acquisition often underperform post-acquisition.
- Excess cash on the balance sheet is detrimental for M&A, possibly due to a lack of discipline in deploying that cash.

July 2016: Preparing for a Slide in Oil Prices -- History May Be Your Guide

With the price of West Texas Intermediate (WTI) in the mid-forties, oversupply concerns and the continued threat of a global slowdown have led many to fear a resumed oil price decline. The year-to-date performance of Oil & Gas (O&G) companies, particularly Integrated O&G entities has been strong, further contributing to concerns that oil may be poised to retrench.

June 2016: Social Media and Stock Returns: Is There Value in Cyberspace?

This review of social media literature represents a selection of articles we found particularly pragmatic and/or interesting. Although we have not done research in the area of social media, we are always on the hunt for interesting insights, and offer these papers for your thoughtful consideration.

April 2016: An IQ Test for the "Smart Money" – Is the Reputation of Institutional Investors Warranted?

This report explores four classes of stock selection signals associated with institutional ownership ('IO'): Ownership Level, Ownership Breadth, Change in Ownership Level and Ownership Dynamics. It then segments these signals by classes of institutions: Hedge Funds, Mutual Funds, Pension Funds, Banks and Insurance Companies. The study confirms many of the findings from earlier work – not only in the U.S., but also in a much broader geographic scope – that Institutional Ownership may have an impact on stock prices. The analysis then builds upon existing literature by further exploring the benefit of blending 'IO' signals with traditional fundamental based stock selection signals.

March 2016: Stock-Level Liquidity – Alpha or Risk? - Stocks with Rising Liquidity Outperform Globally

Most investors do not associate stock-level liquidity as a stock selection signal, but as a measure of how easily a trade can be executed without incurring a large transaction cost or adverse price impact. Inspired by recent literature, such as Bali, Peng, Shen and Tang

(2012), we show globally that a strategy of buying stocks with the highest one-year change in stock-level turnover has historically outperformed the market and has outperformed strategies of buying stocks with strong price momentum, attractive valuation, or high quality. One-year change in stock-level turnover has a low correlation (i.e., <0.15) with commonly used stock selection signals. When it is combined with these signals, the composites have yielded higher excess returns and information ratios (IR) than the standalone raw signals.

February 2016: U.S. Stock Selection Model Performance Review - The most effective investment strategies in 2015
Since the launch of the four S&P Capital IQ® U.S. stock selection models in January 2011, **the performance of all four models (Growth Benchmark Model, Value Benchmark Model, Quality Model, and Price Momentum Model) has been positive each year**. The models' key differentiators – a distinct formulation for large cap versus small cap stocks, incorporation of industry specific information for the financial sector, sector neutrality to target stock specific alpha, and factor diversity – enabled the models to outperform across disparate market environments. In this report, we assess the underlying drivers of each model's performance in 2015 and since inception (2011), and provide full model performance history from January 1987.

January 2016: What Does Earnings Guidance Tell Us? – Listen When Management Announces Good News
This study examines stock price movements surrounding earnings per share (EPS) guidance announcements for U.S. companies between January 2003 and February 2015 using S&P Capital IQ's Estimates database. Companies that experienced positive guidance news, i.e. those that announced optimistic guidance (guidance that is higher than consensus estimates) or revised their guidance upward, yielded positive excess returns. We focus on guidance that is not issued concurrent with earnings releases in order to have a clear understanding of the market impact of guidance disclosures. We also explore practical ways in which investors may benefit from annual and quarterly guidance information.

December 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 6
With commodity prices plunging, global economic trends diverging, and market volatility rising, analyst estimates for 2016 have been revised sharply lower. Yet estimates remain strong in particular regions and sectors, and valuations have moderated. This issue of Equity Market Pulse uses bottom-up trends in estimates and global risk-return and investment strategy performance metrics to address these questions:

November 2015: Late to File - The Costs of Delayed 10-Q and 10-K Company Filings
The U.S Securities & Exchange Commission ("SEC") requires companies to submit quarterly (10-Q) and annual (10-K) financial statements in a timely manner. Companies that cannot file within the statutory period are required to file form 12b-25 with the SEC. In this report we examine the relationship between late filings (form 12b-25s) and subsequent market returns, as well as whether late filings signal deeper fundamental problems within the company. Our results, within the Russell 3000 universe (February 1994 – June 2015), indicate that abnormal returns of late filers is negative prior to and post form 12b-25 filing. Late filers are also typically companies with poor fundamental characteristics relative to peers; investors may want to consider avoiding or short-selling these firms. This report is a continuation of our work in the area of event driven investing, a class of strategies that originate from company specific events.

October 2015: Global Country Allocation Strategies

September 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 5

September 2015: Research Brief: Building Smart Beta Portfolios

September 2015: Research Brief – Airline Industry Factors

August 2015: Point-In-Time vs. Lagged Fundamentals – This time i(t')s different?

August 2015: Introducing S&P Capital IQ Stock Selection Model for the Japanese Market

July 2015: Research Brief – Liquidity Fragility

June 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 4

May 2015: Investing in a World with Increasing Investor Activism

April 2015: Drilling for Alpha in the Oil and Gas Industry – Insights from Industry Specific Data & Company Financials

March 2015: Equity Market Pulse – Quarterly Equity Market Insights Issue 3

February 2015: U.S. Stock Selection Model Performance Review - The most effective investment strategies in 2014

January 2015: Research Brief: Global Pension Plans - Are Fully Funded Plans a Relic of the Past?

January 2015: Profitability: Growth-Like Strategy, Value-Like Returns - Profiting from Companies with Large Economic Moats

November 2014: Equity Market Pulse – Quarterly Equity Market Insights Issue 2

October 2014: Lenders Lead, Owners Follow - The Relationship between Credit Indicators and Equity Returns

August 2014: Equity Market Pulse – Quarterly Equity Market Insights Issue 1

July 2014: Factor Insight: Reducing the Downside of a Trend Following Strategy

May 2014: Introducing S&P Capital IQ's Fundamental China A-Share Equity Risk Model

April 2014: Riding the Coattails of Activist Investors Yields Short and Long Term Outperformance

March 2014: Insights from Academic Literature: Corporate Character, Trading Insights, & New Data Sources

February 2014: Obtaining an Edge in Emerging Markets

February 2014: U.S Stock Selection Model Performance Review

January 2014: Buying Outperformance: Do share repurchase announcements lead to higher returns?

October 2013: Informative Insider Trading - The Hidden Profits in Corporate Insider Filings

September 2013: Beggar Thy Neighbor – Research Brief: Exploring Pension Plans

August 2013: Introducing S&P Capital IQ Global Stock Selection Models for Developed Markets: The Foundations of Outperformance

July 2013: Inspirational Papers on Innovative Topics: Asset Allocation, Insider Trading & Event Studies

June 2013: Supply Chain Interactions Part 2: Companies – Connected Company Returns Examined as Event Signals

June 2013: Behind the Asset Growth Anomaly – Over-promising but Under-delivering

April 2013: Complicated Firms Made Easy - Using Industry Pure-Plays to Forecast Conglomerate Returns.

March 2013: Risk Models That Work When You Need Them - Short Term Risk Model Enhancements

March 2013: Follow the Smart Money - Riding the Coattails of Activist Investors

February 2013: Stock Selection Model Performance Review: Assessing the Drivers of Performance in 2012

January 2013: Research Brief: Exploiting the January Effect Examining Variations in Trend Following Strategies

December 2012: Do CEO and CFO Departures Matter? - The Signal Content of CEO and CFO Turnover

November 2012: 11 Industries, 70 Alpha Signals -The Value of Industry-Specific Metrics

October 2012: Introducing S&P Capital IQ's Fundamental Canada Equity Risk Models

September 2012: Factor Insight: Earnings Announcement Return – Is A Return Based Surprise Superior to an Earnings Based Surprise?

August 2012: Supply Chain Interactions Part 1: Industries Profiting from Lead-Lag Industry Relationships

July 2012: Releasing S&P Capital IQ's Regional and Updated Global & US Equity Risk Models

June 2012: Riding Industry Momentum – Enhancing the Residual Reversal Factor

May 2012: The Oil & Gas Industry - Drilling for Alpha Using Global Point-in-Time Industry Data

May 2012: Case Study: S&P Capital IQ – The Platform for Investment Decisions

March 2012: Exploring Alpha from the Securities Lending Market – New Alpha Stemming from Improved Data

January 2012: S&P Capital IQ Stock Selection Model Review – Understanding the Drivers of Performance in 2011

January 2012: Intelligent Estimates – A Superior Model of Earnings Surprise

December 2011: Factor Insight – Residual Reversal

November 2011: Research Brief: Return Correlation and Dispersion – All or Nothing
October 2011: The Banking Industry

September 2011: Methods in Dynamic Weighting

September 2011: Research Brief: Return Correlation and Dispersion

July 2011: Research Brief - A Topical Digest of Investment Strategy Insights

June 2011: A Retail Industry Strategy: Does Industry Specific Data tell a different story?

May 2011: Introducing S&P Capital IQ's Global Fundamental Equity Risk Models

May 2011: Topical Papers That Caught Our Interest

April 2011: Can Dividend Policy Changes Yield Alpha?

April 2011: CQA Spring 2011 Conference Notes

March 2011: How Much Alpha is in Preliminary Data?

February 2011: Industry Insights – Biotechnology: FDA Approval Catalyst Strategy

January 2011: US Stock Selection Models Introduction

January 2011: Variations on Minimum Variance

January 2011: Interesting and Influential Papers We Read in 2010

November 2010: Is your Bank Under Stress? Introducing our Dynamic Bank Model

October 2010: Getting the Most from Point-in-Time Data

October 2010: Another Brick in the Wall: The Historic Failure of Price Momentum

July 2010: Introducing S&P Capital IQ's Fundamental US Equity Risk Model