

A Factor AlphaSM Approach to REITs

BY OSAM RESEARCH (JUNE 2017)

EXECUTIVE SUMMARY:

- **The public real estate market is uniquely inefficient and a fertile ground for active, factor-based investing.**
- **Real estate is a diversifying asset class with many benefits, but most investors are under-allocated.**
- **Public REITs offer complementary exposure while avoiding many drawbacks and barriers to entry of private real estate with similar gross returns and lower fees.**

OSAM RESEARCH TEAM

Jim O'Shaughnessy
Chris Meredith, CFA
Scott Bartone, CFA
Travis Fairchild, CFA
Patrick O'Shaughnessy, CFA
Ehren Stanhope, CFA
Manson Zhu, CFA

We believe a strong approach for both absolute and excess returns in real estate is an active, conviction-weighted, and factor-based approach in public REITs. While factor investing is most commonly applied to common stocks, we have researched a robust set of unique factors in REITs that have historically delivered strong absolute, risk-adjusted, and consistency of return. Critical to accessing the opportunity presented by these factors is the liquidity inherent in public REITs that is not available in private real estate. REITs have the liquidity to exploit mispricing.

Further, most REIT strategies are very index-like, with active share in the 60% range on average, and heavily concentrated in the largest REITs. This suggests more attractive investments are getting overlooked. Certain selection themes — Value, Quality, and Momentum — can be used to build unique factor-based portfolios of public REITs.

Studies show most institutions are below their real estate allocation targets. Smaller plans are especially under their targets. An active portfolio in public REITs can help to fill that allocation gap while avoiding drawbacks and barriers to entry typically associated with real estate.

Factor Investing in REITs

In our two decades of experience investing in other niche markets, such as Canada, we have found a common feature of markets ripe for alpha opportunity are top heavy benchmarks and low active share strategy coverage (*i.e.*, closet indexers). **While factor investing has caught on in public equity markets, it has been largely overlooked in REITs.** This neglect is likely because REITs require a different set of underlying factors. For example, common ratios like price-to-earnings are ineffective. Our research and track record show that customized factor investing works extremely well in the REIT universe and, better yet, few investors are currently taking advantage of this opportunity.

An Inefficient Market for Factor Investing

The REIT market is very top heavy, the top 25 names make up over half of the market and the top three sectors are just under half. Any index that is market cap-weighted will be heavily concentrated in these names and sectors. This is also true for closet indexers and strategies with asset bloat. Closet indexing is prevalent in “active” REIT strategies. The largest active funds all have a very low active share (*i.e.*, high overlap with the benchmark). Active managers with an active share less than 60% are typically considered “closet indexers” (none of the top 10 REIT funds in the eVestment database have an active share over 60%).¹

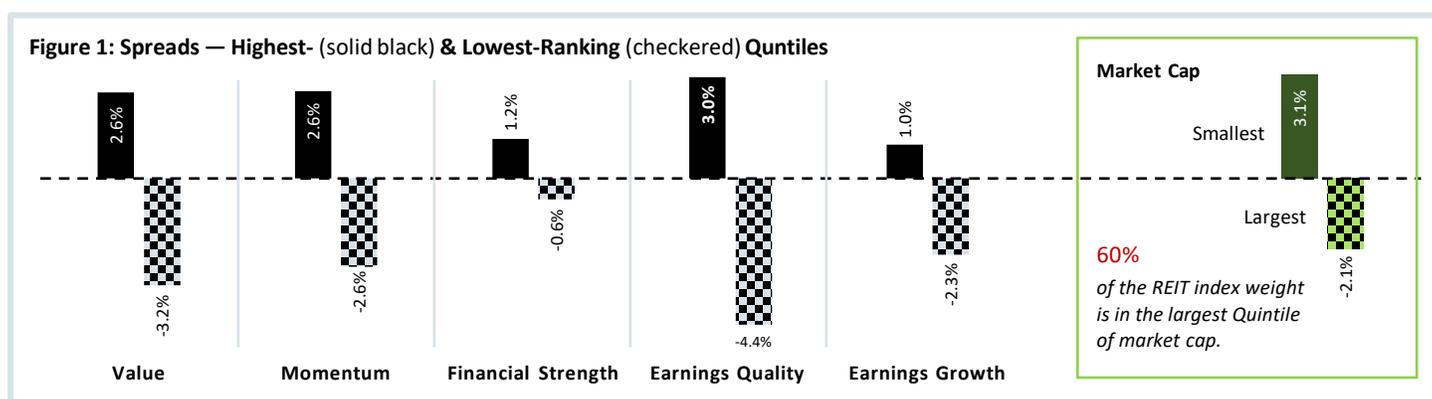
Because most REIT strategies are closet indexers, the largest 25 REITs tend to get the overwhelming majority of analyst attention, which suggests that many of the smaller REITs get overlooked. Nearly half of the smaller cap REITs are covered by two or fewer analysts, and they have 75% less institutional ownership than their large cap peers. The smaller cap REITs have analyst coverage levels similar to the microcap public equities market (see Table 1, next page).

Table 1: Analyst Coverage	Percent of Universe:		Institutional Investors	Average Analyst Coverage	Percent with:	
	By Count	By MCAP			No Coverage	2 or Fewer
Large Cap	12%	53%	715	9	0%	0%
Mid Cap	44%	39%	330	4	7%	26%
Small Cap	44%	8%	175	3	20%	48%

Using Factors to Capitalize on Mispricings

High-quality REITs with cheap valuations and good recent price trends can offer better risk and return profiles than the broader REIT market.

In Figure 1 (below), we show five key investment themes that have had a successful track record of separating winners and losers in public REITs. The chart shows the historical return spread between the highest and lowest ranking 20% of the REIT universe by each theme. Market cap is shown in a similar format to illustrate that any portfolio that uses, or closely resembles, a market cap-weighted approach is likely sacrificing returns. Over 60% of the index is in the largest 20% of names. Below we describe each factor in more detail.



Key Factor Themes — Descriptions

1. Value

As can be intuitively expected, REITs with the largest valuation discounts have historically outperformed peers, however, REITs require their own definition of value. Two of the more popular measures in common equities, (price-to-earnings and price-to-book) can result in very misleading results when evaluating the relative attractiveness of REITs.

Traditional value metrics don't work because historical cost accounting does not recognize one of the key elements of value creation — the appreciation of underlying real estate assets. Cost accounting assumes real estate assets diminish predictably over time even when these values actually *appreciate*. Taking a depreciation expense on an asset increasing in value causes distortions in key financial items. When asset values appreciate, book value and earnings are both understated because they are reduced by an historical expense while the economic gain of asset appreciation is unrecognized.

To compensate, we use funds from operations (FFO) and net asset value (NAV) for REIT valuations. FFO adjusts for distortions caused by depreciation and for non-recurring events like property sales, which makes price-to-FFO a better choice over price-to-earnings. NAV is the estimated market value of all the real estate assets and therefore makes price-to-NAV a more accurate measure of discounts to intrinsic value than price-to-book.

2. Momentum

Momentum would be impossible to take advantage of in private real estate. We are only able to capture the alpha provided by this signal because of the liquid nature of REITs. REITs with good recent trends in their prices have tended to go on to outperform over the next one-year period. Momentum can be used to favor stocks with good relative trends and avoid stocks with very poor recent trends. Momentum works very well when combined with value as the excess returns of the two tend to have a negative correlation.

Past performance is no guarantee of future results. Please see important information titled "General Legal Disclosures & Hypothetical and/or Backtested Results Disclaimer" at the end of this presentation.

3. Growth

We favor real estate companies exhibiting above average growth trends and that also demonstrate good growth potential for the future. We look at the trend of key metrics like FFO and a measure of current profitability. We also include the REITs recent growth trends and any recent surprises in that trend.

4. Financial Strength

We avoid real estate companies that are highly levered or that have poor balance sheet strength relative to peers. We look at leverage ratios, how they are financed, if they are adding debt or paying it down, and how easily they can service their current level of debt with the cash they are generating.

5. Earnings Quality

We avoid REITs that are the most aggressive in their accounting choices. One focus is reported FFO numbers. As a non-GAAP item, this number is not as scrutinized by auditors and therefore has the most potential for dubious assumptions. Any large difference in reported FFO versus audited GAAP results are a red flag. Assumptions in non-cash accrual accounts can also boost a REITs operating profit. We want to avoid the REITs with large accrual increases.

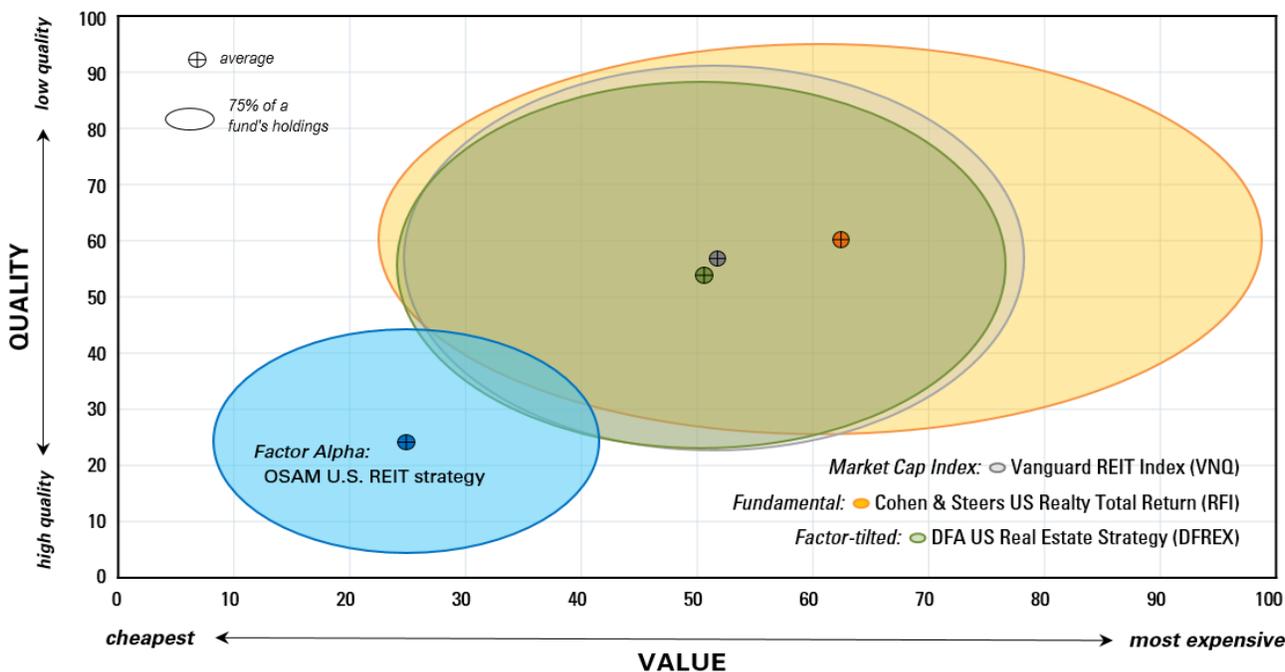
Factor Alpha in REITs — A REIT Strategy Built for Alpha, not Scale

Instead of building portfolios through market cap-weighting, investors are better served using these key factors to build a more concentrated portfolio of stocks with favorable characteristics. We refer to this approach as Factor Alpha.

Portfolios that mimic the market cap-weighted index offer more scale than they do alpha while focusing on Factor Alpha allows for better returns and significantly better factor advantages.²

An effective way to show the advantages of a Factor Alpha REIT portfolio is through Morningstar’s convention of plotting portfolios on two dimensions — Value and Quality in this case (see Figure 2).³ It is immediately apparent the large edge this approach offers. The market cap-weighted portfolios offer broad exposure to REITs but also have middle of the road value and quality. Portfolios that make small tilts towards better characteristics typically have high overlap with the passive index with small advantages on the factors they favor. Our philosophy is that factors drive returns and that a strong way to achieve consistent alpha is to build conviction-oriented portfolios with the highest possible factor profile and pure factor signals.

Figure 2: A Unique Edge in REITs (Percentiles: the lower the number the better the score.)

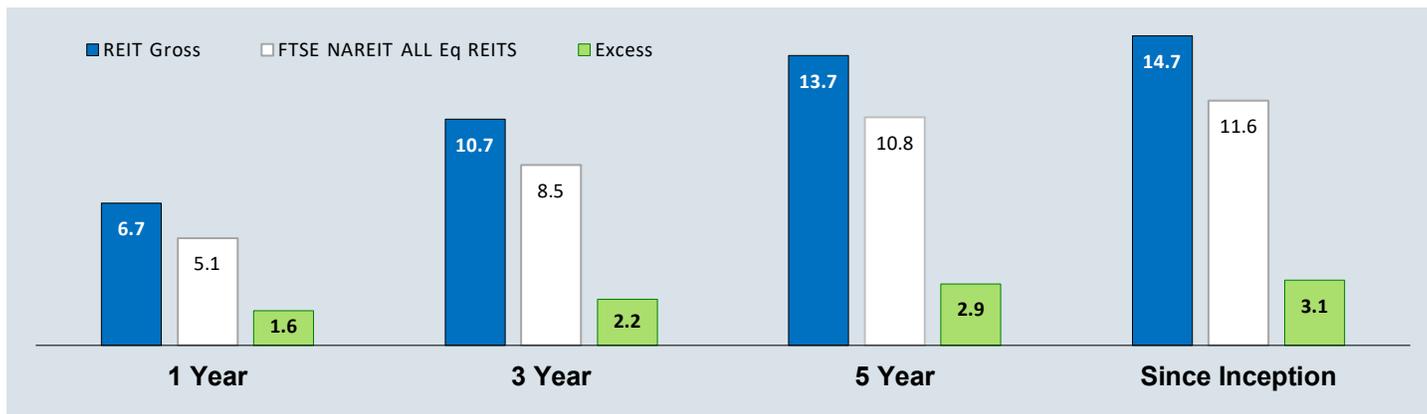


Past performance is no guarantee of future results. Please see important information titled “General Legal Disclosures & Hypothetical and/or Backtested Results Disclaimer” at the end of this presentation.

Better Return Profile with Factor Alpha

The advantage of Factor Alpha is not just theoretical. OSAM has been successfully managing factor portfolios for over 30 years and the live performance of our REIT strategy is a more recent example (incepted 1/1/12). Figure 3 (below) shows the performance statistics of the O’Shaughnessy U.S. REIT Strategy (2012–present) versus the NAREIT All Equity REIT index.

Figure 3: O’Shaughnessy U.S. REIT Performance (% Gross of Fees) Since Inception (1/1/12) through 5/31/17

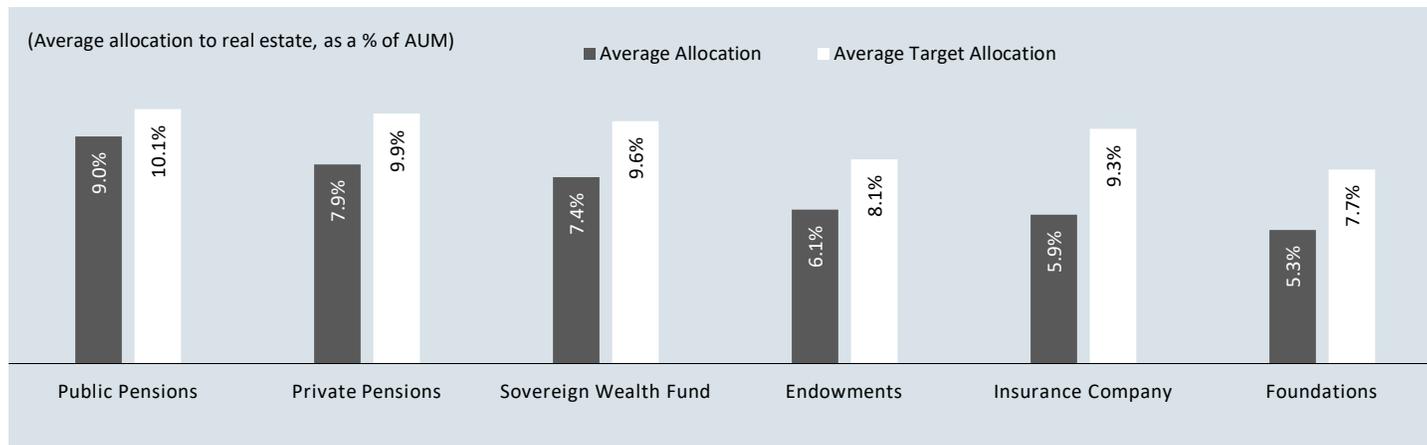


This alpha was achieved taking advantage of the liquidity that only the public REIT market provides, and rotating sectors and names to always invest in the most attractive investments. We employ a very nimble strategy that systematically maintains high conviction overweights to areas with a strong factor profile instead of those with the largest market cap.

Investors are Under-Allocated to Real Estate

A real estate allocation can improve a portfolio in several ways: it can provide diversification, serve as a hedge against inflation, provide current income, and deliver attractive returns. Given the benefits of real estate to a portfolio, it is no surprise that some of the most sophisticated investors have been increasing their exposure to real estate; pensions,⁴ endowments,⁵ and sovereign wealth funds⁶ have all reported increasing allocations to the asset class. That trend is likely to continue as many institutions report they are currently under-allocated to real estate versus their target allocations (see Figure 4). Interestingly, plans under \$1 billion in assets tend to be even more under-allocated to real estate. These smaller institutions have less than half the exposure as their larger peers.⁷

Figure 4: Institutional Investors are Under-Allocated to Real Estate



Smaller plans often don’t have the capital to build a diversified portfolio of direct investment in property or the head count to manage them. Also, they do not have the same access to private equity real estate funds that their larger peers do.

Past performance is no guarantee of future results. Please see important information titled “General Legal Disclosures & Hypothetical and/or Backtested Results Disclaimer” at the end of this presentation.

Private vs. Public Real Estate

Public REITs represent a good option to close the allocation gap mentioned. First, REIT returns have historically been similar to private real estate, but with lower fees and other favorable characteristics. Second, the opportunity set spans twelve sectors, and sixteen sub sectors, which provides diversifying exposure to the asset class that could compliment a concentrated private real estate portfolio.

Public vs. Private — Comparable Returns & Volatility, with Lower Fees & Cash Drag

When choosing between public and private real estate, returns are often a top consideration, but studies have shown both offer similar exposure to the underlying real estate. Although lower volatility and lower correlation to equities and bonds are often cited as key advantages to private investment, when accounting for items that artificially smooth the private index returns these advantages go away. The NCREIF private real estate indices are appraisal-based and do not adjust for leverage, both of which artificially disguise the true volatility in private real estate returns.⁸⁻¹² Some studies even show private equity to be more volatile and risky after these adjustments.¹³

Adjusting returns for fees and cash drag will further favor an investment in public REITs. Institutional investors typically pay around 50bps for a domestic REIT strategy while private investors could pay two and twenty; the range of fees of the funds in NCREIF indices range from 106bps to 303bps.^{9,10} The NCREIF indices also assume 100% investment and don't account for any dry powder — which can be as high as 27% on average.¹¹ This cash will not participate in market returns and will create a cash drag, REITs will not have this cash drag.¹² Higher fees and cash drag erode the returns of private real estate and the private indices are inflated to show a gross return the average private real estate investor does not attain.

REITs Have Favorable Liquidity, Transparency, and Diversification

In addition to favorable returns, REITs offer better liquidity, more transparency, and a wider range of property types.

REITs are traded just like stocks allowing investors to allocate capital quickly to capitalize on mispricings. There is no lockout period, no minimum investment or high entry/exit cost; all typical of a private investment.

In private real estate, there is no standardized reporting and transparency will vary widely by fund. As publicly-traded companies, REITs disclose a lot more information — therefore investors don't bear the burden of all the due diligence themselves. The transparency into fees, property valuations, and financials will all be better with REITs.

Private real estate tends to focus on core corporate property sectors which include office, apartments, retail, industrial, and hotels. REITs offer a much more diverse exposure to real estate that includes self-storage, health care, infrastructure, timber, data centers, among other specialized real estate companies. Over half of these noncore sectors outperformed the NAREIT index in 2016 and two were among the highest performing real estate sectors for the year with specialty REITs returning 20.2% on average and Data Centers returning 24.8% (versus the 8.9% return of the benchmark).

With many favorable features for REITs, a factor-based approach in REITs can offer more than just the potential for better returns to any investors faced with the decision of private versus public real estate.

SUMMARY

REITs offer similar returns to a private real estate investment and have many favorable aspects in comparison to the latter.

We feel the better option for real estate investors looking for improved returns is a concentrated, all cap REIT portfolio with the highest-ranking valuations, quality, and momentum. An active, factor-based REIT strategy has a proven track record that can benefit any allocation; whether used to increase liquidity, increase access, or broaden the list of real estate opportunities across the risk-return spectrum.

¹ Cremers, Martijn and Petajisto, Antti, "How Active is Your Fund Manager? A New Measure that Predicts Performance" (March 31, 2009). AFA 2007 Chicago Meetings Paper; EFA 2007 Ljubljana Meetings Paper; Yale ICF Working Paper No. 06-14.

² http://osam.com/pdf/Commentary_AlphaOrAssets_FactorAlphaVersusSmartBeta_April-2016.pdf

³ Value being one of the main factors in which we care about ranking stocks and quality is a combination of Financial Strength, Earnings Quality, and Earnings Growth that we described earlier in this article. In the "Factor Style Grid" (similar to a Morningstar Style Box™), the average portfolio value is the dot and the larger circle is 75% of the portfolio's weight.

⁴ <http://www.oecd.org/daf/fin/private-pensions/2015-Large-Pension-Funds-Survey.pdf>

⁵ http://www.nacubo.org/Research/NACUBO-Commonfund_Study_of_Endowments.html

⁶ http://igsams.invesco.com/downloads/IGSAMS_2015.pdf

⁷ http://www.nacubo.org/Research/NACUBO-Commonfund_Study_of_Endowments.html

⁸ Brad Case, Ph.D., CFA, CAIA "Is Private Real Estate Actually Less Volatile Than Public Real Estate?"

⁹ <https://www.preqin.com/docs/samples/2016-Preqin-Global-Real-Estate-Report-Sample-Pages.pdf>

¹⁰ The average fees and expenses in funds in the NCREIF indices reported fees ranging from 106bps (average of Core Funds ODCE) to 303bps (Average of Opportunistic Funds). (Source: REIT.com)

¹¹ From "Preqin 2016 Global Real Estate Report Sample Pages" (<http://www.preqin.com/docs/samples/2016-Preqin-Global-Real-Estate-Report-Sample-Pages.pdf>).

¹² The weighted average cash relative to market cap is 2.9% for the NAREIT All Equity REIT Index (as of 12/31/2016). Also, REITs are required to return 90% of net income back to shareholders in the form of dividends.

¹³ Brad Case, Ph.D., CFA, CAIA "Is Private Real Estate Actually Less Volatile Than Public Real Estate?"

General Legal Disclosures & Hypothetical and/or Backtested Results Disclaimer

The material contained herein is intended as a general market commentary. Opinions expressed herein are solely those of O'Shaughnessy Asset Management, LLC and may differ from those of your broker or investment firm.

Please remember that past performance may not be indicative of future results. Different types of investments involve varying degrees of risk, and there can be no assurance that the future performance of any specific investment, investment strategy, or product (including the investments and/or investment strategies recommended or undertaken by O'Shaughnessy Asset Management, LLC), or any non-investment related content, made reference to directly or indirectly in this piece will be profitable, equal any corresponding indicated historical performance level(s), be suitable for your portfolio or individual situation, or prove successful. Due to various factors, including changing market conditions and/or applicable laws, the content may no longer be reflective of current opinions or positions. Moreover, you should not assume that any discussion or information contained in this piece serves as the receipt of, or as a substitute for, personalized investment advice from O'Shaughnessy Asset Management, LLC. Any individual account performance information reflects the reinvestment of dividends (to the extent applicable), and is net of applicable transaction fees, O'Shaughnessy Asset Management, LLC's investment management fee (if debited directly from the account), and any other related account expenses. Account information has been compiled solely by O'Shaughnessy Asset Management, LLC, has not been independently verified, and does not reflect the impact of taxes on non-qualified accounts. In preparing this report, O'Shaughnessy Asset Management, LLC has relied upon information provided by the account custodian. Please defer to formal tax documents received from the account custodian for cost basis and tax reporting purposes. Please remember to contact O'Shaughnessy Asset Management, LLC, in writing, if there are any changes in your personal/financial situation or investment objectives for the purpose of reviewing/evaluating/revising our previous recommendations and/or services, or if you want to impose, add, or modify any reasonable restrictions to our investment advisory services. Please Note: Unless you advise, in writing, to the contrary, we will assume that there are no restrictions on our services, other than to manage the account in accordance with your designated investment objective. Please Also Note: Please compare this statement with account statements received from the account custodian. The account custodian does not verify the accuracy of the advisory fee calculation. Please advise us if you have not been receiving monthly statements from the account custodian. Historical performance results for investment indices and/or categories have been provided for general comparison purposes only, and generally do not reflect the deduction of transaction and/or custodial charges, the deduction of an investment management fee, nor the impact of taxes, the incurrence of which would have the effect of decreasing historical performance results. It should not be assumed that your account holdings correspond directly to any comparative indices. To the extent that a reader has any questions regarding the applicability of any specific issue discussed above to his/her individual situation, he/she is encouraged to consult with the professional advisor of his/her choosing. O'Shaughnessy Asset Management, LLC is neither a law firm nor a certified public accounting firm and no portion of the newsletter content should be construed as legal or accounting advice. A copy of the O'Shaughnessy Asset Management, LLC's current written disclosure statement discussing our advisory services and fees is available upon request.

The risk-free rate used in the calculation of Sortino, Sharpe, and Treynor ratios is 5%, consistently applied across time.

The universe of All Stocks consists of all securities in the Chicago Research in Security Prices (CRSP) dataset or S&P Compustat Database (or other, as noted) with inflation-adjusted market capitalization greater than \$200 million as of most recent year-end. The universe of Large Stocks consists of all securities in the Chicago Research in Security Prices (CRSP) dataset or S&P Compustat Database (or other, as noted) with inflation-adjusted market capitalization greater than the universe average as of most recent year-end. The stocks are equally weighted and generally rebalanced annually.

Hypothetical performance results shown on the preceding pages are backtested and do not represent the performance of any account managed by OSAM, but were achieved by means of the retroactive application of each of the previously referenced models, certain aspects of which may have been designed with the benefit of hindsight.

The hypothetical backtested performance does not represent the results of actual trading using client assets nor decision-making during the period and does not and is not intended to indicate the past performance or future performance of any account or investment strategy managed by OSAM. If actual accounts had been managed throughout the period, ongoing research might have resulted in changes to the strategy which might have altered returns. The performance of any account or investment strategy managed by OSAM will differ from the hypothetical backtested performance results for each factor shown herein for a number of reasons, including without limitation the following:

- Although OSAM may consider from time to time one or more of the factors noted herein in managing any account, it may not consider all or any of such factors. OSAM may (and will) from time to time consider factors in addition to those noted herein in managing any account.
- OSAM may rebalance an account more frequently or less frequently than annually and at times other than presented herein.
- OSAM may from time to time manage an account by using non-quantitative, subjective investment management methodologies in conjunction with the application of factors.
- The hypothetical backtested performance results assume full investment, whereas an account managed by OSAM may have a positive cash position upon rebalance. Had the hypothetical backtested performance results included a positive cash position, the results would have been different and generally would have been lower.
- The hypothetical backtested performance results for each factor do not reflect any transaction costs of buying and selling securities, investment management fees (including without limitation management fees and performance fees), custody and other costs, or taxes – all of which would be incurred by an investor in any account managed by OSAM. If such costs and fees were reflected, the hypothetical backtested performance results would be lower.
- The hypothetical performance does not reflect the reinvestment of dividends and distributions therefrom, interest, capital gains and withholding taxes.
- Accounts managed by OSAM are subject to additions and redemptions of assets under management, which may positively or negatively affect performance depending generally upon the timing of such events in relation to the market's direction.
- Simulated returns may be dependent on the market and economic conditions that existed during the period. Future market or economic conditions can adversely affect the returns.

Past performance is no guarantee of future results. Please see important information titled "General Legal Disclosures & Hypothetical and/or Backtested Results Disclaimer" at the end of this presentation.

8/3/21