

O'Shaughnessy Quarterly Investor Letter Q2 2018

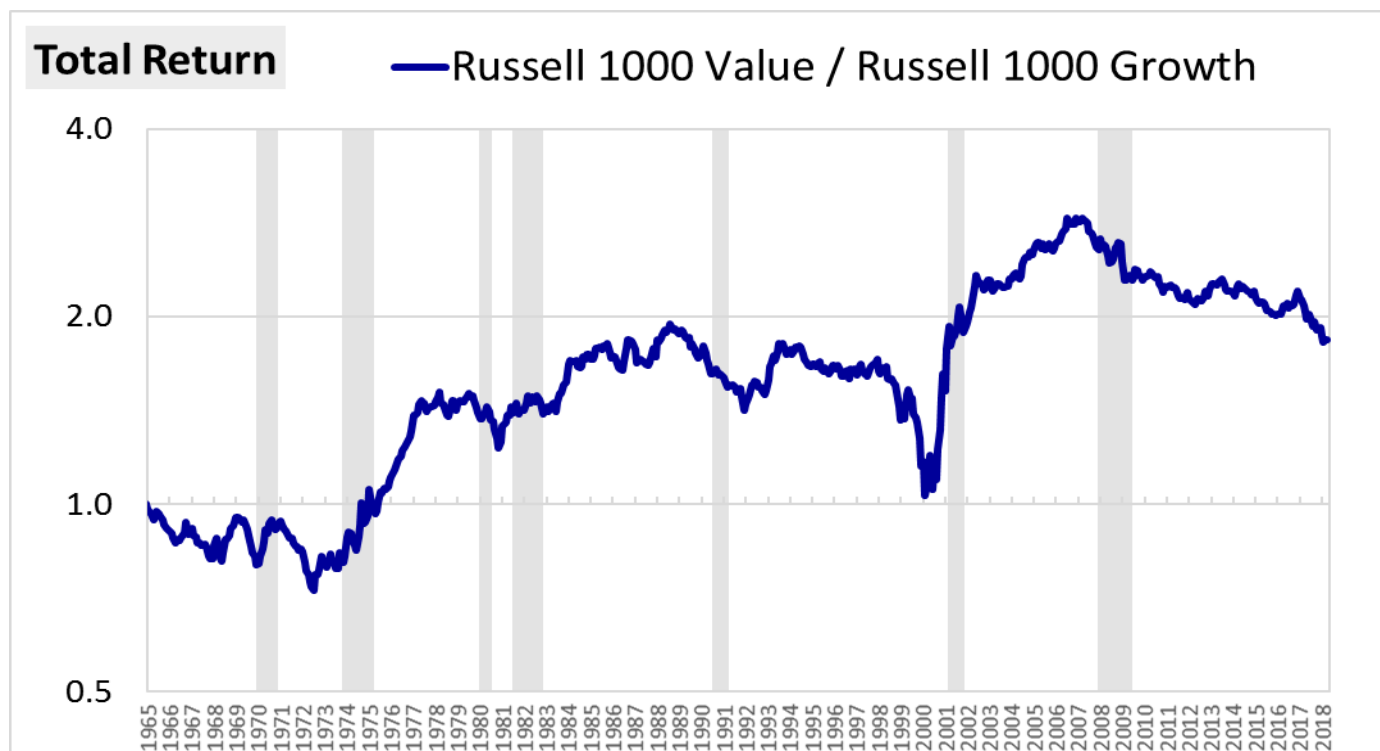
June 30, 2018

Dear Investor,

In this quarter's letter, we're going to share our thoughts on three key topics: the Value factor's extended run of poor performance, the ways we believe asset managers can borrow concepts from the technology sector, and our current research agenda.

The Value Winter

Is Value ever going to work again? Since 2010, the Russell 1000 Growth index has outperformed the Russell 1000 Value index by roughly 70%, leaving many investors wondering if Value's historical edge will persist, or whether, instead, the future will be more random.



Since 2010, growth stocks like Apple, Amazon, and Facebook have dominated. Value stocks like Exxon, Bank of America, and Proctor and Gamble have lagged significantly.

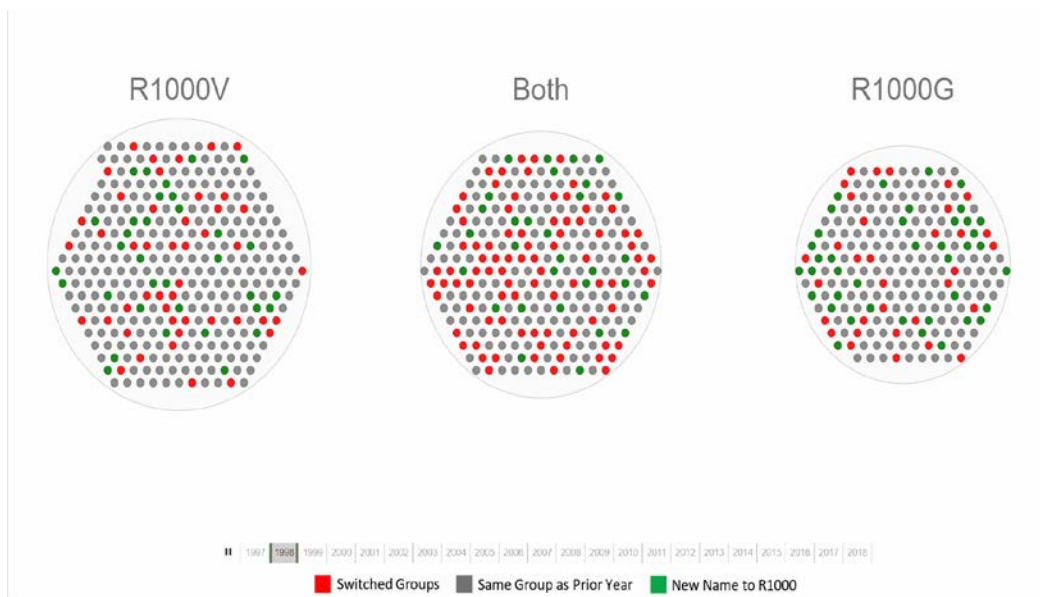
But this has not been a trend concentrated among just a few stocks. Growth outperformed value in *every single sector*. The results were most pronounced in Energy, Tech, and Consumer Discretionary—but even within the Telecom, Materials, and Real Estate sectors, growth beat value. Here is the total effect within each sector (the result of stock selection and allocation):

	Total Performance Effect (%)-- Growth Over Value (2010-Present)
Energy	17.44
Consumer Discretionary	13.97
Information Technology	13.19
Financials	8.71
Industrials	4.21
Consumer Staples	4.17
Utilities	3.49
Health Care	2.17
Real Estate	1.93
Materials	0.83
Telecommunication Services	0.27

These sector results are only useful in hindsight, and there is almost no chance that the next 8 years will look the same. Still, they are a useful way of illustrating how pervasive this trend has been.

Perhaps a more interesting angle is to parse the drivers of returns using a framework we introduced in our paper "[Factors From Scratch](#)."

It is difficult to explain fundamental performance within the Russell style indexes, because there is significant turnover each year. In this animation, we show in red companies which are switching indexes on rebalance dates, and in green companies which are entering into an index for the first time.



*For the best visual version of this chart and letter, please visit the Blog & Research section of www.osam.com

In [Factors From Scratch](#), we introduced a method for decomposing index returns in the presence of that turnover. Specifically, we identified three sources of return for high-turnover indexes:

- Holding Period EPS Growth - growth in the underlying companies during the holding periods.
- Rebalancing EPS Growth - growth due to multiple expansion that gets removed from the index via rebalances back into cheaper stocks.
- End to End Valuation Changes - Valuation changes that do not get removed via rebalances, but that instead stay in the index over the entire period of the analysis.

Typically, growth stocks have much better holding growth, but trade into more expensive stocks on rebalances, resulting in poor rebalance returns¹. Value stocks, by contrast, have weaker holding growth (the companies are often in distress), but make up for it via trading down into cheaper stocks and riding multiple expansion during the holding period.

Here is how the Russell indexes have looked over the very long term:

Index	Return Source	June 1965 - June 2010
R1000 Value	Holding Period EPS Growth	7.01%
	Multiple Expansion that Got Rebalanced Out of the Index	3.18%
	Multiple Expansion that Stayed in the Index	0.06%
R1000 Growth	Holding Period EPS Growth	16.25%
	Multiple Expansion that Got Rebalanced Out of the Index	-7.65%
	Multiple Expansion that Stayed in the Index	-0.46%

Notice the trade off. In the growth index, you “pay” for very strong holding growth with “expensive” rebalances: the Russell 1000 Growth, on average, trades into more expensive stocks. In the value index you “get paid” for owning weaker companies (not literally, of course, you just get to pay a cheaper multiple, which the market has historically re-rated higher in the year after purchase, delivering you a strong rebalance return). It would be great to get high growth at a cheap price, but it doesn’t work that way. There is a balance between value and growth. Historically that balance has slightly favored value.

¹ For a full description of this method, read [Factors From Scratch](#)

But now look at this same data since June, 2010:

Index	Return Source	June 1965 - June 2010	June 2010 - Apr 2018
R1000 Value	Holding Period EPS Growth	7.01%	1.76%
	Multiple Expansion that Got Rebalanced Out of the Index	3.18%	8.28%
	Multiple Expansion that Stayed in the Index	0.06%	3.46%
R1000 Growth	Holding Period EPS Growth	16.25%	17.65%
	Multiple Expansion that Got Rebalanced Out of the Index	-7.65%	-5.77%
	Multiple Expansion that Stayed in the Index	-0.46%	5.05%

Even in a period of above average returns, value's holding growth has been far worse than historic norms. Russell 1000 Value stocks have often been cheap for good reason. Think here of the major energy companies, like Exxon Mobil, which have represented among the largest weights in the index. Growth, meanwhile, has performed more in line with its historic norms, showing similar rebalancing and holding returns.

Both strategies have benefitted from strong end-to-end valuation changes, as the market is much more expensive in 2018 than it was in 2010. But relative to value, growth has benefitted *more* from this end-to-end multiple expansion, gaining an additional 1.5% per year (5.05% per year for growth vs. 3.46% for value from that effect). The higher return from end-to-end multiple expansion for the Growth index reflects the fact that it has received a boost from becoming more expensive relative to history. If this increased expensiveness were to unwind going forward, the prior source of added return will turn into a drag.

As investors, we want to pay unfair prices for future *per share* fundamental growth and cash flows. If you knew future growth, you'd be an invincible investor (so long as you didn't use leverage), because you could compare today's prices with future growth and pick the better opportunities. Value has beaten Growth historically because while holding growth isn't great, the price you pay for Value has been *unfair* (i.e., too low).

That has not held true since 2010. To summarize the findings through this lens: this period hasn't been an abnormally strong run for growth companies. Instead, it's been a very bad period for the EPS growth of value stocks.

The Future of Value

If the value factor is going to work in the future, it will be for the same reasons that it has worked in the past: rebalancing return (our way of tracking multiple expansion across rebalances) will prove strong enough to overcome relatively lower holding growth. The ability to swap into cheaper stocks at each rebalance and hold as their multiples expand will make up for weaker holding return and lead to real excess return. The conditions for strong rebalance growth are present in today's market. What remains unknowable is whether the cheapest stocks will continue to have very weak growth during the holding period.

While we've spent a lot of time thinking about value, it is important to note that we don't advocate single factor investing. We believe better results come when you thoughtfully combine many signals into an overall model, and construct a portfolio with much more rigor than the "highest ranking quintile" approach used in most academic papers. We will continue to use value factors as key inputs into our models, because the evidence and our intuition tell us that positioning in securities characterized by lower expectations provides an edge for long term investors, even if the standalone factor trudges through long winters of underperformance.

Borrowing From Tech

If value investing is a bet that the future might not be as bad as prices suggest, venture capital investing is a bet that the future will be very bright. While we are not venture capitalists, we are fascinated with technology companies in general, and startups in particular. In our quest to deliver a better investing experience to our clients, we have and will continue to borrow heavily from the world of technology. Here are four examples that any asset or wealth manager could adopt.

Open Source

The fastest way to learn is to be (even slightly) wrong on the internet. At OSAM, we've talked a lot about the importance of sharing our work openly and *quickly* because we've seen the power of exposing ideas to a smart and critical audience.

Investment strategies on Wall Street have often been opaque. Strategies are often "proprietary" and lathered with "secret sauce." And while some investors view complexity and opacity as *good* things, we believe that a more open, honest, research-centric approach will beat the proprietary model in the coming decades.

Even if you are transparent about your research and strategy, it is typically *very* hard for an outsider to replicate what you are doing. If you move with appropriate haste and keep improving, we believe that the incremental edge gained from sharing research is greater than protecting it as "proprietary."

Of course, this isn't for everyone. Many well-known firms with exemplary track records are black boxes. Even firms which are open in some regards—us included—have some secrets worth protecting. We aren't going to share our code on GitHub. But we will share the concepts we are exploring to stress test them with the investment community. My guess is most firms would benefit from some version of open sharing. In the end, "open source" is just another way of saying "investor education," and we love making that bet.

Data

If you told an analyst that they couldn't use excel ever again, they'd have an existential crisis. Years from now, we will say the same thing about Python (and other similar tools). As Michael Recce, Neuberger Berman's chief data scientist, said to me: "in excel, the data is visible and the formulas are hidden, in Python, the code is visible, and the data is hidden." With insane amounts of new data coming on-stream, the ability to work with huge datasets will become increasingly important. This includes sourcing, scrubbing, and interpreting data—and the ability to ask good questions (i.e. form hypotheses).

One area of focus for venture investors and technology companies is artificial intelligence and machine learning. Metaphors always fall short, but Andrew Ng has a convenient one: "AI is the new electricity." Based on Andrew's observations in this [phenomenal video](#) and following this conversation with [Ash Fontana](#), we believe that in the future, many "moats" will instead be called "loops."

A loop is built by acquiring some preliminary data set, then using that dataset to build a product that is useful to customers, then using customer interactions with the product to get more data, which is then used to improve the product, which allows you to get more customers, and so on. A data edge can compound very quickly, so investment firms should be thinking about how they can build these advantages. We are doing this on the investing and business sides, in extremely simple ways like an [investing research email list](#), and in more complicated ways like a portfolio diagnostic tool that we call "X-Ray."

Machine learning technology ("ML") can be intimidating, especially when the models become so complex that they become nearly impossible to interpret. But the various ML methods, with goofy sounding names like "random forests," represent enormous levers if applied with caution and care. For those interested in learning a bit more, we recommend [Machine Learning for Humans](#) and [A Visual Introduction to Machine Learning](#).

We've found that most of these methods produce subpar results for predicting stock price movements. Often a simple equally weighting of variables does better out of sample. You can't just feed ML algorithms a bunch of data and future returns and expect to produce a magic formula. But, the methods do appear very useful for other tasks: natural language processing, classification, and some forms of prediction, to name a few. The transformation of share repurchase authorizations from an unstructured mess on 8-Ks to structured data would have been a major pain years ago. Now it is relatively simple, and potentially useful.

To be very clear: these tools are not a panacea. Most of their immediate applications are quite mundane, allowing you to accomplish tasks as if you had [a million interns](#). They are points of leverage for pre-existing intuition and understanding: allowing the user to do a better job of what they are already doing. Today, ML isn't integral to what we do. But, just as you wouldn't function without tools like email, Excel, and now maybe Slack, we believe it a wise investment—personally and professionally—to build out expertise in the next generation of technology tools as soon as possible.

Platforms

Perhaps the most impactful lesson we've learned from the tech world is the power of platforms. Facebook, Google, Uber, Airbnb, and GitHub are all great examples of platforms.

Of particular interest to us is the marketplace model, where a company recruits "producers" and "consumers" on two sides of a market. To better understand how this model worked, I personally invested in a company called Ladder, which brings more affordable fitness coaching (and hopefully other health and wellness coaching) to everyone. The producers are coaches, and the consumers are the rest of us who want help.

The platform is the technology that sits between them: making coaches lives much easier with tons of tools for managing their businesses and workflow, and making consumers lives better by carefully tracking what they do and building accountability with their coach (there is a loop lurking here, too, where the data being collected can fuel algorithms that can help clients tailor workouts for specific goals, and maybe even project when those goals will be attained in a way that would be totally impossible for a trainer in a gym).

I made this investment to learn best practices. I learned the importance of making life easy for producers—who, in our case, are researchers and other team members. The platform is a “research platform,” consisting of a comprehensive, deep, and very clean dataset on global equities, software, technology, and programming capabilities. The consumers are our investors and other interested parties who follow what we do.

A key feature of most platform companies is that many of the producers don’t work for the LLC full time or at all. You as a Facebook user are both producer AND consumer. Because our research platform has grown so powerful, we set up the [OSAM research partners program](#) to take this idea to the next level. We will likely experiment with ways of getting more people involved very soon, to build out as big of an ecosystem as we can.

It is a fun exercise to consider: what would it mean in your business if you open sourced some part of your work, began gathering unique data sets, and built a platform of your own? We’ve found each to be a powerful (and affordable) boost and will continue to find more ways to deploy these ideas. bottom line: watch venture capitalists and technology startups, and borrow liberally from them.

Research Agenda

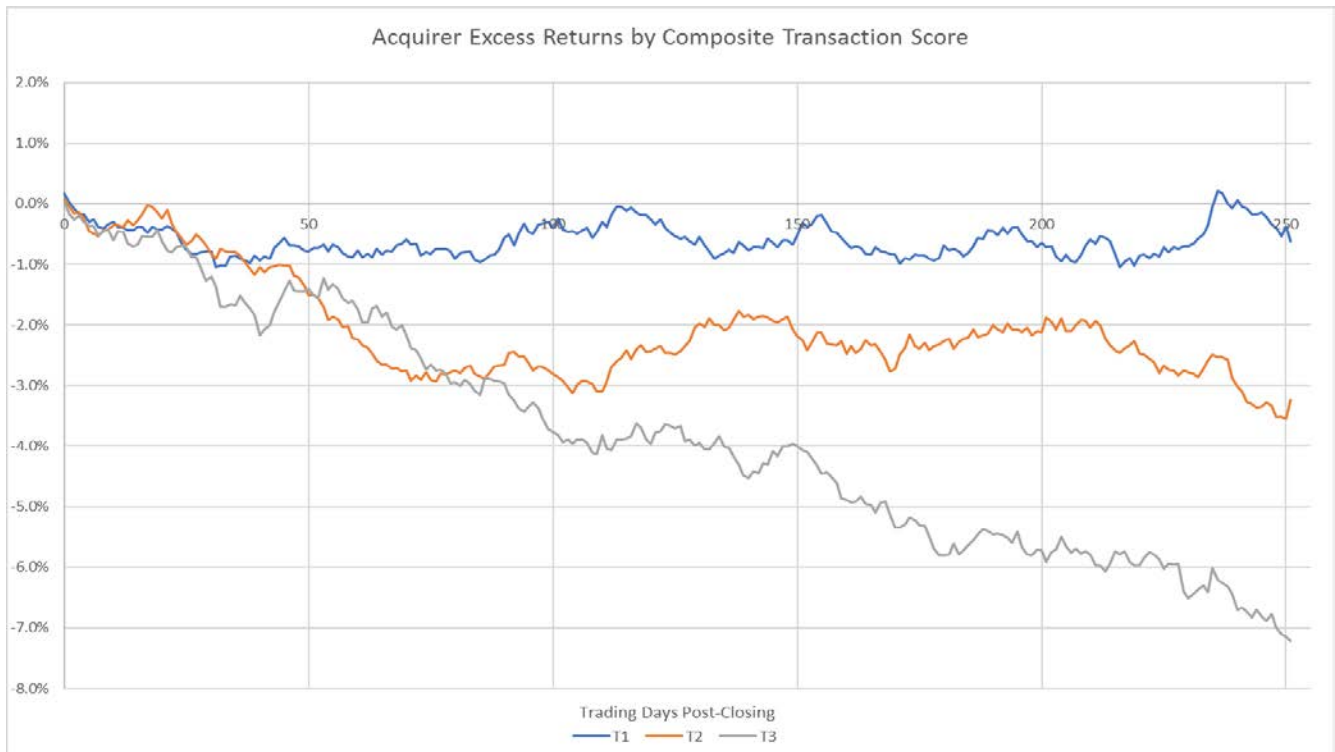
We typically have a small list of major, structured research projects and several other small ideas that we are working on. The small ideas often graduate to the structured category—it’s the perfect farm system. Here are three major projects currently underway. We will share our final findings and decisions with our investors upon completion.

“Event Calendar”

While it would be fair to call us factor investors, we think that is too simple a label. We are not providing exposure to generic factors like “value.” Instead we are trying to find the most useful signals for buying and selling equities and combining those signals into strategies that deliver significant alpha over time.

Financial statement and pricing data has long been the bedrock of quant research, but tracking other events at companies may also yield interesting results. We are in the process of mapping a generic calendar of potential events for each company and investigating whether certain types of developments (many reported via 8-Ks, for example) signal future results.

M&A activity is a good example of an event study. We’ve long had rules in place to sell any acquisition *targets* held in the portfolio when certain conditions are met (we are not merger arbitrageurs and are satisfied with a sufficiently full price). But what about the companies doing the acquiring? Focusing on factors like financing (equity + debt issuance as fraction of the deal value), payment type (stock, cash, combination), and price (premium paid for the target), we’ve found interesting preliminary results which show that perhaps certain types of acquisitions are more likely than others to lead to poor returns for the acquiring company.



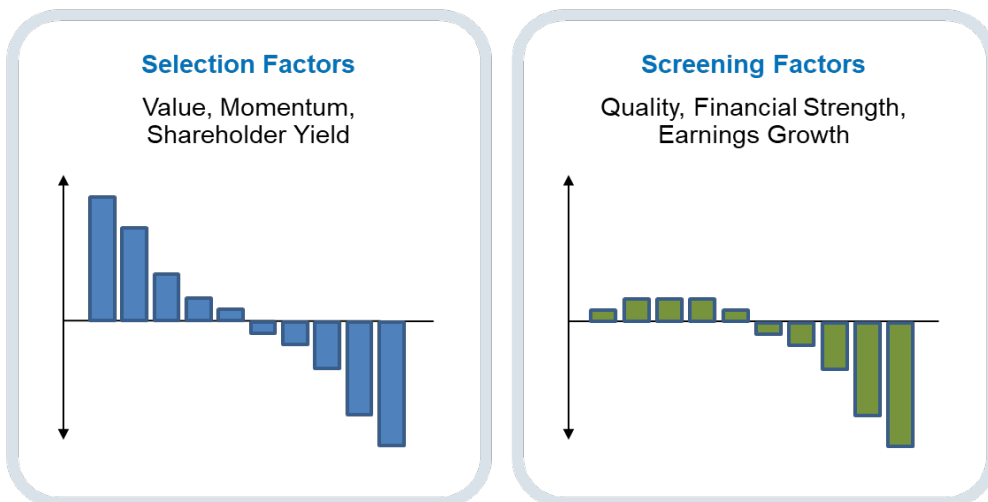
If this signal were to make it into production in our models, it may only affect a few stocks across years of trading—but our goal is to add (or protect) return wherever possible. Similar studies are underway for other common events, like restatements. These could be deployed in the live model environment in a variety of ways, still to be determined.

Sector Junk

We are as sick of the term “quality” as everyone else. We prefer the term “junk” because it more accurately describes a better way to use so called “quality” factors.

Many factor studies focus on long/short portfolio returns: the spread between the highest-ranking stocks by a factor (decile, quintile) and the lowest-ranking. In general, factors which measure the health of a business (like balance sheet, earnings quality, profitability) show stronger results in the negative tail. This is distinct from selection factors like value or shareholder yield, which show a more monotonic pattern of excess return.

Decile spreads on the same universe over the same time period can be used as a benchmark for effectiveness.



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Put simply: avoiding junk is more useful than buying quality.

Some sectors and industries, like banks, have unique data which may help us better identify junk. While we've incorporated bank specific factors already in our U.S. models, we are continuing the charge to identify junk within sectors like REITs, international banks, and other industries to better weed out *bad businesses* from consideration in our model, no matter how strong they appear based on valuation, momentum, or shareholder yield.

We expect to deploy these findings on an ongoing basis.

Taxes and Turnover

Most quantitative equity research focuses on returns, but costs can be just as critical. Costs associated with turnover are the enemy. They come in the form of commissions, market impact (how much our trading is pushing stock prices), and taxes (if applicable). Over the years, we've worked very hard to reduce these costs as much as possible, and have an open project to further reduce them.

We are focused specifically on the rebalance frequencies and methodologies for our various strategies. Because we now have data and tools that allow us to estimate market impact costs historically (via ITG's cost curve data), and allow us to model taxes to the cent, we have a better "after cost" testing method.

We will deploy this tool to see if we can improve our trading methodology to improve "all in" net returns for investors.

Our chassis will remain in place: disciplined selection and rebalancing based on fundamental signals like value, momentum, and shareholder yield. But each aspect of the process, be it signal measurement, rules for buying and selling, portfolio construction, or cost management, should improve through time.

For more on the mechanics of value (and momentum), we encourage you to check out *Factors From Scratch*, which is the first product of the OSAM research partners program, and our most widely read paper to date. This coming quarter look for more research on factors like low vol, quality, and shareholder yield, a summary of how to apply to machine learning, and costs charged by active managers. Have a great quarter.

Thank you for reading,



Patrick W. O'Shaughnessy,
Chief Executive Officer and Portfolio Manager

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