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Intro to Factor Investing

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At Litman Gregory, we have been actively reviewing, monitoring, and thinking about the factor investing landscape for many years. This piece is a summary of the research and literature we have reviewed to date. Our conclusion is that factor-based strategies warrant inclusion in our overall active fund opportunity set.

What Are Factors?

Studies by finance academics show that most of the returns of active managers over and above passive market-weighted benchmarks can be explained by their portfolios' exposure to a small number of systematic factors and return premia. Academics and practitioners are essentially looking for characteristics that can help explain excess returns but do so by looking to the past to see what has historically worked.

These factors are being used as the building blocks of "smart" or "strategic" beta products that aim for outperformance over market-cap-weighted indexes at a lower cost than traditional active stock funds. Factor investing takes the form of a rules-based approach that attempts to capture returns that are not explained by general market risk (beta). Long-only factor investing (popularly known as "smart" or "strategic" beta) is about systematically building diversified portfolios using time-tested excess return drivers with the hope of outperforming a market-weighted index.

Factor investing is not a free lunch, though. In order to achieve an excess return, investors must either bear additional return volatility (for risk-based factors) or bear the risk that investors wise up to the game and cease making the same cognitive errors they have in the past (for behavioral-based factors).

The "Factor Zoo"

In recent years, researchers have exposed hundreds of potential additional factors. But which factors really matter? With all the published factors to filter through, as well as numerous definitions for each factor, it is a tedious task narrowing it down. Their persistence into the future is still to be determined and their discovery could be a result of data mining. The final verdict on many recently published factors is still out.

In their book *Your Complete Guide to Factor-Based Investing: The Way Smart Money Invests Today*, Andrew Berkin and Larry Swedroe offer a good framework for thinking about and analyzing factors. They say a factor must be

- **Persistent:** It holds across long periods of time and different economic regimes.
- **Pervasive:** It holds across countries, regions, sectors, and even asset classes.
- **Robust:** It holds for various definitions (for example, there is a value premium whether it is measured by price-to-book, price-to-earnings, or price-to-cash flow).
- **Investable:** It holds up not just on paper, but also after considering actual implementation issues, such as trading costs.
- **Intuitive:** There are logical risk-based or behavioral-based explanations for its premium and why it should continue to exist.

The list of widely adopted factors that seem to meet these strict criteria is relatively short: value, size, momentum, and quality/profitability. Reports on these individual factors are available (or are soon to be published) at www.AdvisorIntelligence.com to our research subscribers.

The Factor Investing Minefield

Diminishing (or Disappearing?) Returns

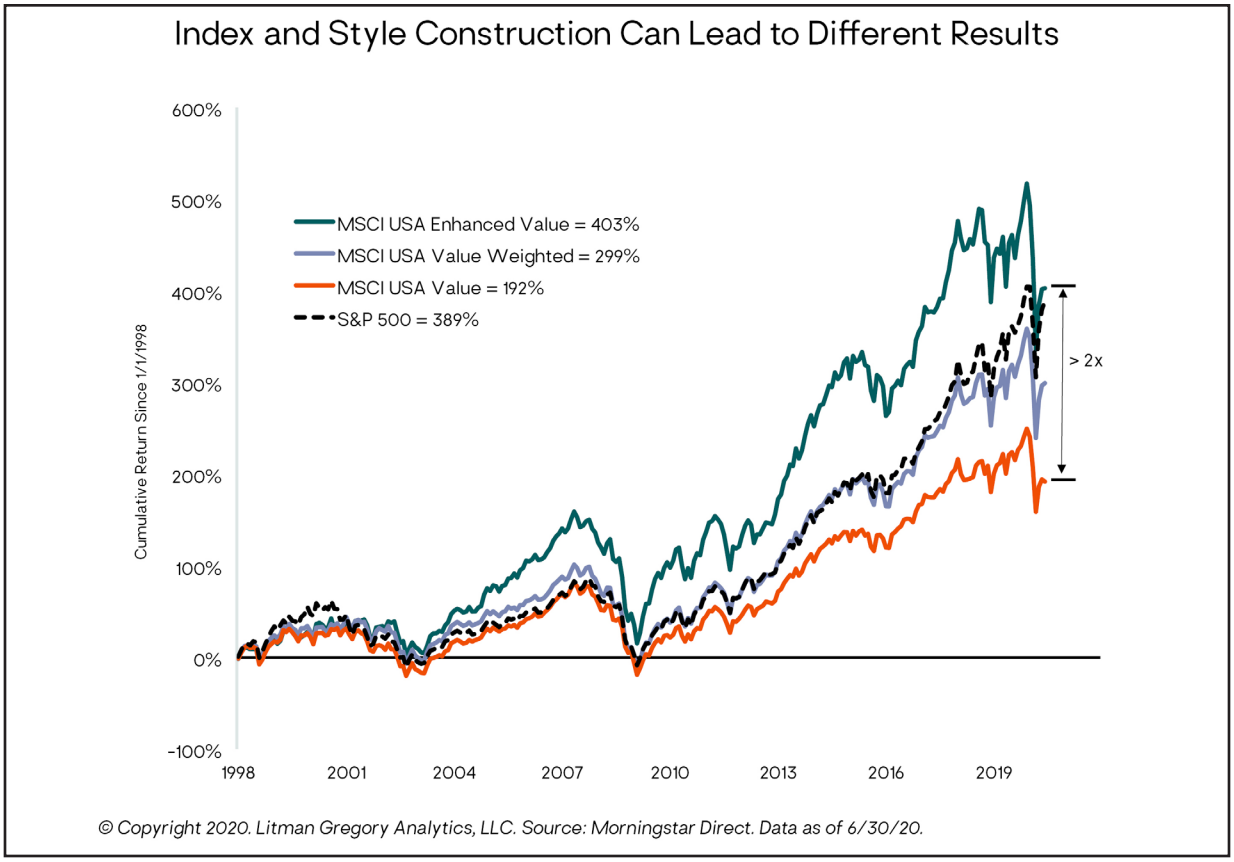
- As more people invest in a particular factor strategy, it would make sense that the premium should decrease—whether it just diminishes (but is still positive) or completely goes away is the important question.

- The actual publication of a newly "discovered" factor may diminish its future excess return. In 2015, David McLean and Jeffery Pontiff analyzed 97 different factors and found that the average factor return declines significantly in out-of-sample tests and post-publication (though these results were not confirmed in international markets).

- The historical evidence for a handful of factors is compelling. But the flipside of that is when a factor "stops working" for an extended period of time (like value in this market cycle), it can be difficult to prove definitively that the factor is now no longer statistically significant. The table below shows Newfound Research's estimate of the median years required to disprove some major well-known factors—in some cases it would take many investment lifetimes:

	HML	SMB	QMJ	BAB	UMD
Median Years Until Failure	67	43	132	284	339

Source: Newfound Research. HML = value, SMB = size, QMJ = quality, BAB = low volatility, and UMD = momentum



Implementation Costs

- Academic studies generally ignore transaction and market impact costs. Paper portfolios ignore management fees. Depending on the analysis, some high-turnover strategies, such as momentum, do not survive or are significantly impacted by implementation costs.

- One counterargument is offered by quantitative investment firm AQR, who state that with careful implementation astute practitioners can still capture the bulk of many factor premia.

Definitions Matter

- The way factors are defined and the way indexes are designed, constructed, and weighted can have a big outcome on returns. Definitions and weighting methodologies should be robust and well-tested in and out of sample.

- Looking at the chart on the previous page, the return difference between the top- and bottom-returning value indexes (from the same provider, MSCI) was more than 2x!

- The best thing an investor can do is ensure factor definitions are robust and that each of them has been thoroughly researched (independent of index and fund providers). And deviating too far from academically vetted definitions is a recipe for data mining and overfitting.

Long-Only Versus Long-Short

- The standard practice when studying factor premiums is to create a long portfolio of securities with desirable attributes and a short portfolio of those with unattractive characteristics. However, investors can capture a premium by investing long-only, which many do through readily available smart beta products.

- In fact, long-only approaches are more practical to implement and are more robust to real-world investing costs.

- David Blitz and his colleagues at Robeco make the point that if a draconian scenario plays out and factor premiums don't actually persist into the future, at least a long-only implementation will capture the market premium and keep pace with the market-cap-weighted index. For long-short investors, if factors don't persist, the best scenario is a *zero* return!

Concluding Thoughts

- Factor investing is not a fad and may deliver excess returns over time.

- Decide what factors are relevant. Develop your own views on your own set of factors so that you have a better chance of sticking with them.

- It may go without saying, but don't invest with active managers that are just providing you factor exposures at a higher cost.

- Even if you don't explicitly invest in factor strategies, investors can benefit from at least monitoring factor exposures.

- A similar level of due diligence as fundamental active strategies is needed.

On that last point, while most factor strategies track an underlying index, they are still active. They don't deserve any less due diligence than any other active fund. There are a lot of options on the menu—many seem similar

but there are differences that will lead to different outcomes. It is important to understand the differences, as they help frame return expectations. And simply because a product says it's giving you access to a factor does not mean it is giving you a fair reward. Many strategies will claim to be based on empirical evidence that has been thoroughly researched, but this may not always be the case, or it may be a suboptimal way to capture the exposure. There is still a huge role for evaluators of strategies and managers.

For us at Litman Gregory, the most practical takeaway is that factor products can be used to either (1) replace an active manager that is simply providing more expensive exposure to a well-known factor or (2) as a way to complete a portfolio that may be chronically underweight an excess return driver. Regardless, factor-based investing raises the bar even further for active managers.

Bottom line, factor strategies invest in areas known to produce attractive returns. They deserve a deeper look, and at Litman Gregory, they will be considered as part of our active fund opportunity set.

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