

How to Evaluate Factor-Based Investment Strategies

Due diligence on “smart beta” strategies should be anything but passive

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KEY TAKEAWAYS

- The performance of factor-based investment strategies—even those targeting the same factor exposure—can vary significantly, and much more than truly passive strategies.
- The return dispersion of factor-based strategies is caused by a number of key differences among them, including varying factor definitions and approaches to portfolio construction.
- As a result, investors should carefully evaluate factor-based strategies, using a due diligence process similar to what they might use for actively managed funds.

The passive investing landscape has evolved significantly since the first index funds were launched in the 1970s to provide investors with low-cost market exposure and simple, transparent portfolio construction. Factor-based (also known as “smart” or “strategic” beta) investment strategies emerged more recently as an improvement on market capitalization-weighted (cap-weighted)¹ index funds, featuring custom weightings toward certain well-researched factors that have been used by active managers for decades—such as value,

size, momentum, quality, and low volatility. Exposures to these factors have historically provided higher absolute or risk-adjusted returns than the broader market over time, making factor-based strategies potentially compelling additions to a portfolio (see Fidelity *Leadership Series* article “An Overview of Factor Investing,” Sep. 2016).

The factor-investing marketplace has expanded to include a broad range of non-cap-weighted strategies targeting different factor exposures and using varying index construction methodologies. Even strategies that target the same factor often differ in their underlying index construction, and, as a result, performance among them can vary considerably. Therefore, investors looking to add factor-based strategies to their portfolios may be well served to avoid thinking of them as simply passive vehicles. Instead, they may want to evaluate them with a similar level of due diligence—and potential advisory input—commonly used for actively managed funds.

In this article, we will identify key elements that contribute to the return dispersion across factor-based strategies and outline several criteria that investors should consider when evaluating them.

The evolution of passive investing

Early index funds aimed to track cap-weighted indexes (e.g., the S&P 500 or Russell 1000). Eventually, indexes by style box emerged (e.g., value and growth indexes) so that active portfolio managers could be more closely benchmarked against their specific investment styles or objectives rather

¹ With a simple market capitalization-weighted approach, a company's share of the index depends on the market value of the company as a share of the market value of the index.

than the broader market. International and global indexes, and eventually those targeting developed or emerging markets, also followed, but they were still mostly cap-weighted.

Approximately 10 years ago, however, non-cap-weighted factor-based strategies emerged.² Traditional index providers began publishing indexes with custom weightings designed to represent certain factor exposures, and these indexes became the foundation for investable strategies. Active managers also began launching proprietary indexes as the groundwork for their own factor-based strategies.

As we've discussed, however, individual and institutional investors have been employing factor exposures for decades to enhance their portfolios. About 25 years ago, quantitatively oriented managers began to launch actively managed factor-based funds, and many are still managed in this way. They tend to be well diversified, systematic, and focused on portfolio construction, with the majority of the active risk coming from factor exposures rather than from individual stock selection.

² Alongside the advent of the Morningstar style box in the late 1990s, new ETFs emerged. Those early style ETFs are included in Morningstar's "strategic beta" categorization. Non-cap-weighted, factor-based strategies emerged more broadly, however, approximately 10 years ago.

Today, there are more than 600 factor-based ETFs in the marketplace (Exhibit 1) and they are nearly as varied as actively managed funds. They may differ in their objectives, factor definitions, selection and weighting methodologies, universe, or rebalancing rules, among other characteristics. As a result, their performance profiles can also be quite varied.

Unlike truly passive funds, dispersion among factor-based strategies can be significant

As shown in Exhibit 2, the return dispersion among more traditional cap-weighted ETFs is very limited. Many closely track their respective cap-weighted indexes, so the investor experience is very similar across funds within the same category. The return dispersion among factor-based strategies, however, can be considerable (even among strategies that target the same underlying factor). Therefore, the performance of one value strategy, for example, may be very different from that of another value strategy.

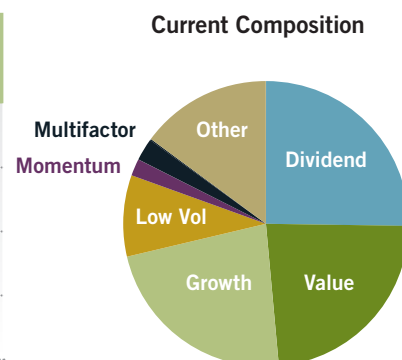
Key evaluation criteria to consider

There are a number of elements that contribute to the return dispersion among strategies that target the same factor, and

Exhibit 1 The Growth of the Factor-Based ETF Marketplace and its Current Composition

Factor-based strategies have gained in popularity in recent years and compose a large proportion of the total ETF landscape.

	1993	1995	1997	1999	2001	2003	2005	2007	2009	2011	2013	2015	2016*
Total ETFs	1	2	19	30	104	123	207	608	763	1,087	1,358	1,808	1,939
Total ETF AUM (\$B)	\$0.3	\$1	\$6	\$29	\$74	\$152	\$302	\$611	\$783	\$1,058	\$1,695	\$2,135	\$2,383
Factor-Based ETFs	0	0	0	0	20	26	56	184	214	303	384	541	607
% Factor-Based	0%	0%	0%	0%	19%	21%	27%	30%	28%	28%	28%	30%	31%



*As of July 2016. Chart and table include U.S.-domiciled ETFs only. Current composition categories shown are Morningstar "strategic beta" classifications presented as a share of the total universe by total assets under management (AUM). Categories (excluding multifactor) are composed only of single-factor strategies, which are the primary focus of this article. "Other" includes smaller categories (by AUM), such as size, quality, multi-asset, non-traditional fixed income, non-traditional commodity, and equal-weighted. Source: Bloomberg Finance L.P., Morningstar, as of Jul. 31, 2016.

each is a key input into a careful due diligence process that investors should consider when evaluating them.

1) What is the strategy's objective, and what factors does it target?

First, investors must decide which factor exposure (or combination of exposures) they are targeting to own, based on their investment objectives. Individual factors can behave differently during varying time frames and market environments (Exhibit 2). Are investors looking to improve returns over time, adjust risk, or achieve another desired outcome, such as income? Are they seeking to overweight value, quality, or dividend stocks in their portfolio? Once the investment objectives are identified, investors can begin to think about which factor exposures might enable them to achieve those objectives.

2) Who is the index provider?

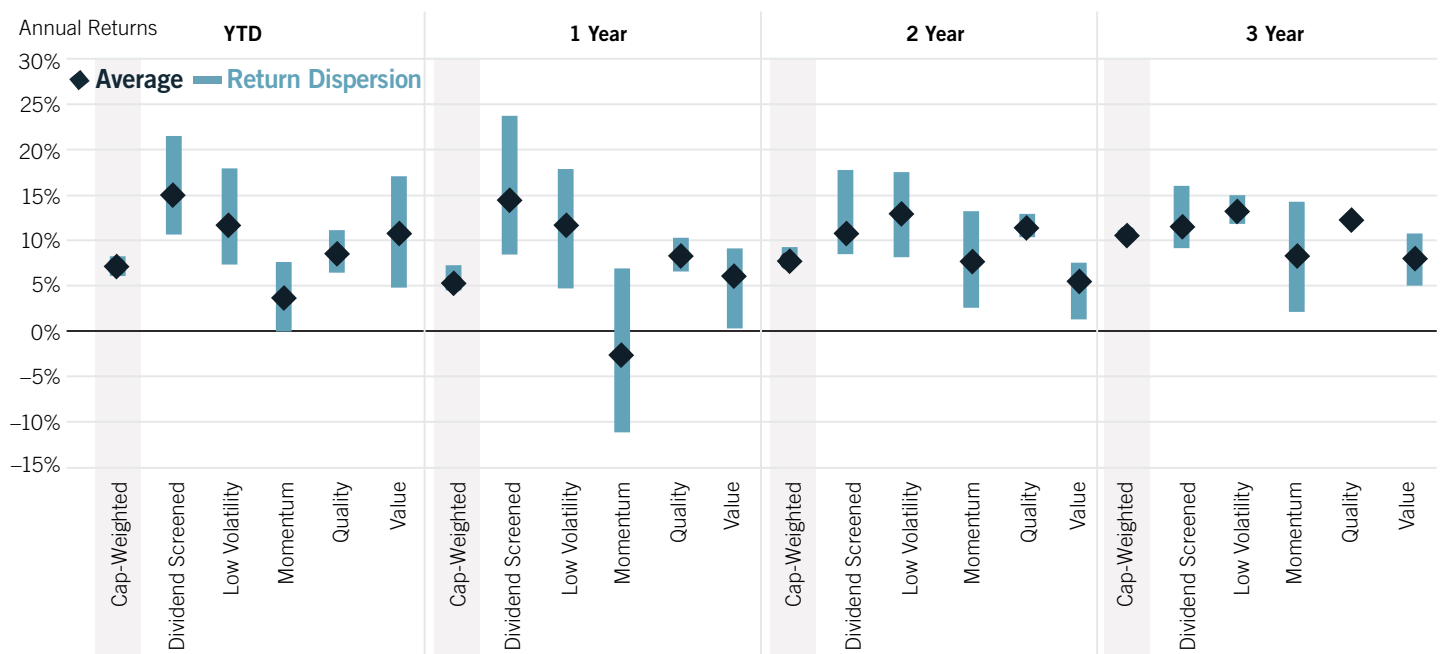
There is often complex portfolio construction and decision-making required of factor-based investments. Some asset management firms offer factor-based strategies that track

their own proprietary indexes. Increasingly, traditional index providers are creating index methodologies for factor-based strategies, and by doing so, have entered a realm once reserved for asset management firms.

When in the market for actively managed funds, investors often evaluate the stability, experience, and track records of asset management firms and portfolio management teams. Investors should consider similar portfolio management standards for factor-based strategies and be aware that, in many cases, the portfolio construction methodologies are devised by the underlying index providers. Therefore, in addition to evaluating index providers' capabilities and track records to accurately calculate corporate events and replicate market segments (typical criteria for traditional passive investments), investors and their advisors should also assess index providers' expertise in creating sound investment methodologies. For example, how strong are their research capabilities, specifically as they relate to factor exposures? Factor-based strategies offered by asset management firms with strong track records,

Exhibit 2 Performance of Cap-Weighted vs. Factor-Based Strategies

The return dispersion among factor-based strategies is significantly wider than that of cap-weighted passive funds.



YTD: year-to-date through Jul. 31, 2016. The chart reflects actual annualized returns of cap-weighted U.S. large-cap ETFs and non-cap-weighted single-factor ETFs within each category. Factor categories reflect Morningstar "strategic beta" classifications. The quality factor is most commonly used within multifactor strategies and there are very few U.S.-domiciled single-factor quality ETFs. Source: Bloomberg Finance L.P., Morningstar, as of Jul. 31, 2016.

robust research capabilities, and experience analyzing factors to inform their investment approaches may be appealing to investors.

3) Who is the ETF/fund provider?

First, it's important to evaluate the ETF/fund provider's track record in closely tracking indexes. Another key consideration for a factor-based strategy is the ETF provider's ability to perform due diligence on the underlying index methodology. For example, some ETF providers and their investment boards may focus only on a fund's tracking error (how closely it tracks the respective index), and may not evaluate the efficacy of the underlying index methodology itself. It's important for ETF providers to understand and monitor the investment merits of the underlying index and its accuracy in capturing intended exposures, while also ensuring that the index can be closely tracked. (Depending on the investable universe, market liquidity and capacity constraints can sometimes be

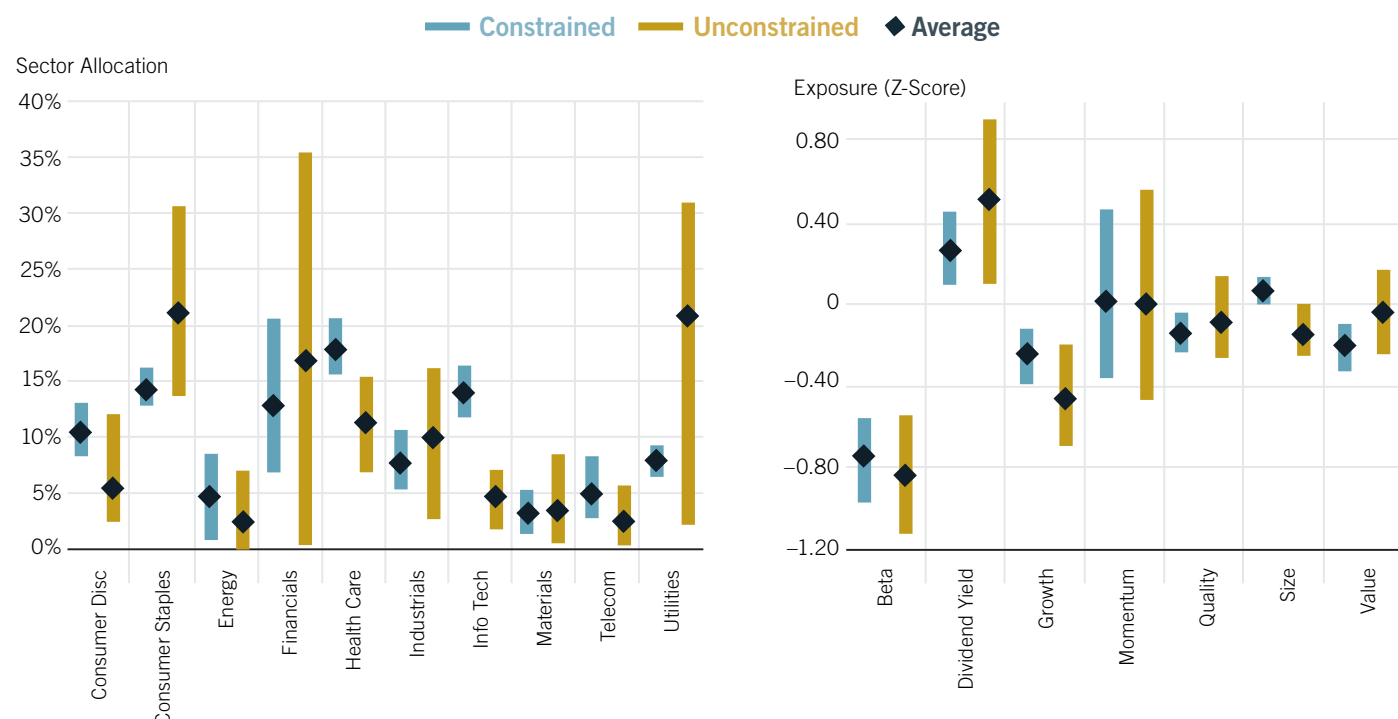
problematic.) Again, the burden falls on the investor or advisor to evaluate the ETF provider and the index methodology.

4) How is the factor exposure defined?

Factors can be defined in a number of ways, and there are many metrics that can be used to capture exposure to them in portfolios. For example, value exposure can be achieved by examining earnings, sales, or cash flows to judge whether a stock appears inexpensive. Investors looking to upgrade the quality of their portfolios may consider stocks with higher profitability, more stable income and cash flows, and a lack of excessive leverage. Low-volatility stocks may be characterized by more-stable revenues and earnings, by low accruals, or simply by less variability in monthly returns. And income-seeking investors may look at stocks' dividend yields, dividend payout ratios, or how long a company has been increasing its dividend. The way a factor is defined and the metrics used to capture the exposure may be markedly different between strategies. This variation in factor definition

Exhibit 3 Constrained vs. Unconstrained Low-Volatility Strategies

Sector allocations and other incidental exposures can vary significantly among strategies.



Data reflect the averages and ranges of sector compositions and Barra style exposures of two large (by AUM) factor-based low-volatility strategies from Nov. 30, 2011, through Jul. 31, 2016. Z-score: number of standard deviations (measures of variation) above or below the exposures of the MSCI USA Index. Beta: measure of a stock's sensitivity to the movement of the broader market. Source: MSCI, FactSet, as of Jul. 31, 2016.

contributes to the potentially significant performance dispersion among strategies that target the same factor (Exhibit 2).

5) What is the underlying portfolio construction methodology?

Once an investor understands which factor a strategy is targeting, how it is defined, and which metrics are used to capture the exposure, it is important to examine the strategy's methodology and investment process.

Four key questions to consider:

1) Is the strategy constrained or unconstrained? Neither approach is necessarily better than the other, but it is important for investors to understand the key differences. Unconstrained factor strategies seek to gain exposure to specific factors without limits on potential size or sector overweights, or other incidental exposures. Those in favor of an unconstrained approach argue that the best way to maximize exposure to a desired factor is to remove limits on size/sector bets and other incidental exposures, because they are merely side effects of targeting a specific factor. Constrained strategies, however, try to reduce any incidental exposures, and prefer that the desired factor be the main contributor to the performance and risk relative to the market.

It is critical that investors understand a strategy's construction methodology, so that they can determine how potential incidental exposures could affect the aggregate risk exposures of their broader portfolios. Exhibit 3 shows some of the key differences between two low-volatility strategies, one constrained and one unconstrained. For example, allocations to the consumer staples, financials, and utilities sectors have varied significantly between the two strategies, as have the unintended exposures to the dividend yield, growth, quality, size, and value factors. Therefore, investors or their advisors should research how a factor-based strategy is constructed to determine whether a constrained or unconstrained strategy is most appropriate for their needs. For more detail on how to use factor-based strategies in a portfolio, see Fidelity *Leadership Series* article "Putting Factors to Work" (Sep. 2016).

2) Is the strategy's investment process sound? In many cases, factor-based strategies may be marketed showing past performance that is based on historical backtesting of the underlying index, prior to the index's inception date. While backtesting is helpful, it remains an open question how the

indexes and the vehicles tracking them will fare going forward, when transaction costs and other variables are introduced. Even if historical risk-adjusted performance appears strong, investors or their advisors should evaluate strategies to determine if the investment process and philosophy are robust, with a high likelihood of consistent performance during varying market environments.

3) Does the strategy's rebalancing frequency provide adequate time to address market cycles? For example, companies that have been performing well for a period of time (with positive momentum) may fall out of favor and then exhibit negative momentum, all in a matter of months. Therefore, more frequent rebalancing may be appropriate for momentum strategies. Quality companies, on the other hand, tend to remain that way for some time, so quality exposure is often more stable and those strategies can be rebalanced less frequently. ETF providers might also prefer to rebalance less frequently to reduce the level of turnover in the fund.

4) What is the strategy's index universe? To better understand a factor-based strategy's underlying holdings, it is important to know whether it is composed only of large-cap stocks, or if it includes the broader market. These differences among strategies could have implications for a broader portfolio's market capitalization or size exposure as well as the fund's ability to track its underlying index.

Multifactor strategies may warrant further evaluation

Factor returns tend to be cyclical, but most factors are generally not highly correlated with one another, so diversifying across multiple factors may help long-term investors enhance the risk-adjusted returns of their portfolios. As a result, a number of strategies in the marketplace target multiple factors and are designed to achieve more consistent performance over time. Multifactor strategies may require even more due diligence than single-factor strategies. The interactions among different factors can be difficult to untangle, and the exposure to each factor can be dynamic, changing regularly based on the strategies' index construction methodologies.

(continued on page 7)

How an investor might choose among low-volatility strategies

The following hypothetical example details how an investor or advisor looking for a factor-based low-volatility strategy might assess three potential options, based on the criteria outlined in this article. (Note that the index and ETF providers' names have been excluded; however, as described earlier, a qualitative assessment should be part of the due diligence process.)

- The investor is selecting among low-volatility strategies to potentially reduce the level of risk in a portfolio.
- Each strategy has a different definition of low-volatility. ETF A, for example, seeks to minimize portfolio volatility within a given set of constraints, whereas ETF B and C simply rank the individual securities by their level of volatility and then capture a subset of low-volatility stocks. ETF B looks at the volatility of price returns, while ETF C evaluates a company's financial

statements, under the assumption that strong balance sheets lead to more-consistent, less-volatile stock performance over time. These distinct definitions of low-volatility are likely significant contributors to the varying performance of the three ETFs.

- The strategies vary in whether they are constrained or unconstrained. ETF A is constrained, so any sector overweights or incidental exposures will likely be limited, while ETF B and C are unconstrained, with potentially larger sector bets and other incidental exposures.
- The strategies' rebalancing frequencies vary as well. ETF A rebalances semiannually, while ETF B and C rebalance quarterly.
- The index universe varies across the three options. ETF A targets the large-cap and mid-cap U.S. equity markets, while ETF B and C hold large-cap stocks only.

	ETF A	ETF B	ETF C
Targeted Factor	Low Volatility	Low Volatility	Low Volatility
Factor Definition	Optimized to minimize the level of total portfolio risk given a set of constraints.	Considers each stock in the S&P 500 and selects those with the least volatile price returns.	Selects a basket of stocks based on the strength of their financial statements, using cash balances, long-term debt ratios, and return on equity.
Constraints	Security, style, and sector constrained relative to the underlying index	Unconstrained	Unconstrained
Rebalancing Frequency	Semiannually	Quarterly	Quarterly
Universe	U.S. equity: Large- & mid-cap	U.S. equity: Large-cap	U.S. equity: Large-cap
YTD Performance*	12.08%	11.52%	6.86%
1-Year Performance	12.92%	13.56%	6.22%
3-Year Performance	13.32%	11.90%	11.25%
5-Year Performance	N/A	15.23%	13.45%

*Through Jul. 31, 2016. Many of the characteristics outlined above can generally be found within a fund's prospectus or on the underlying index provider's website, where the methodology is explained. The three ETFs described above represent actual funds in the marketplace. Returns are annualized. Return on equity: a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. Source: ETF.com, as of Jul. 31, 2016.

Which factors are being targeted, how they are being combined, and whether the particular combination makes sense from an investment standpoint can significantly affect the outcomes of multifactor strategies. For example, if a multifactor strategy targets two factors that are highly correlated, it may perform more like a single-factor strategy. Or, if a strategy targets factors that have a strong negative correlation, the exposures may offset one another. In either case, some of the key diversification benefits may be nullified. The way factor exposures are combined is another consideration, because even strategies that target the same exposures can perform quite differently based on varied approaches to factor weighting.

Investment implications

The factor-investing marketplace has grown exponentially over the past 10 years, as investors have sought targeted and streamlined access to factor exposures. Factor-based strategies from capable providers, with sound construction methodologies and robust investment processes, can be compelling additions to a portfolio. However, not all factor-based strategies are created equal, and the return dispersion among them can be quite broad. Therefore, it is important for investors or their advisors to carefully evaluate these strategies, with a level of due diligence more typical of actively managed funds.

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Investing involves risk, including risk of loss.

Past performance is no guarantee of future results.

Diversification and asset allocation do not ensure a profit or guarantee against loss.

All indexes are unmanaged. You cannot invest directly in an index.

Index definitions

MSCI USA Index is a market capitalization-weighted index designed to measure the equity market performance of the U.S.

Russell 1000 Index is a market capitalization-weighted index designed to measure the performance of the large-cap segment of the U.S. equity market.

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