Putting Factors to Work

Three approaches to implementing factor-based investment strategies

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KEY TAKEAWAYS

- A strategic allocation to a single or combination of factor-based strategies can help investors reap the potential long-term benefits of factors, and should be determined based on individual investment styles and objectives.
- By varying factor exposures over time, investors can express investment views based on their cyclical outlooks or other criteria.
- In addition, factor-based strategies can be helpful portfolio construction and risk management tools, allowing investors to manage aggregate exposures in their broader portfolios.

Academic research and historical performance have illustrated that exposure to certain factors may improve returns, reduce risk, and/or help investors achieve specific investment outcomes. Therefore, investors may consider employing factors to build or enhance their portfolios. But implementing factor-based (or "smart" or "strategic" beta) investment strategies may be perceived as challenging, and some investors may be unsure how best to do so. In this article, we illustrate three potential approaches to using factor-based strategies: 1) for strategic exposure to factors, 2) for cyclical exposures that vary through time, and 3) as portfolio construction and risk management tools.

Strategic exposure: Capturing the potential long-term benefits of factors

Factors such as size, value, momentum, quality, low-volatility, and dividend yield have been widely adopted by investors seeking to outperform the market over time, reduce risk, or achieve a desired investment outcome (for more detail, see Fidelity *Leadership Series* article "An Overview of Factor Investing," Sep. 2016). In consideration of these potential long-term benefits, a strategic allocation to an individual or a combination of factors may be appealing for investors.

Three Approaches to Factor Investing

Strategic Exposure	Strategic allocations to factors can enhance risk-adjusted returns. Investors may consider exposure to one or a combination of factors to take advantage of their potential benefits.
Cyclical Exposure	Because factor returns can vary through time, adjusting factor exposures using a cyclical framework may help investors express a market or investment view.
Portfolio Construction	Investors and advisors can use factor-based strategies to fine-tune their exposures and better align their broader portfolios with their intended investment objectives and risk profiles.

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Exhibit 1 Excess Returns of Factors

These key factors have outperformed the broader market over time.

Factor	Average Excess Return
Value	3.36%
Dividend Yield	2.46%
Momentum	1.57%
Quality	1.39%
Size	0.82%
Low Volatility[1]	0.49%

[1]The primary objective of low-volatility investing is to reduce risk. However, academic research and historical performance have shown that low-volatility portfolios may also outperform the market over time. See appendix for factor definitions/methodologies. Factor portfolios are equal-weighted and sector-neutral, assume the reinvestment of dividends, and exclude fees and other implementation costs. Average excess return: compound average of yearly excess returns relative to the equal-weighted Russell 1000 Index from Jan. 1986 through Mar. 2016. Past performance is no guarantee of future results. Source: FactSet, as of Mar. 31, 2016.

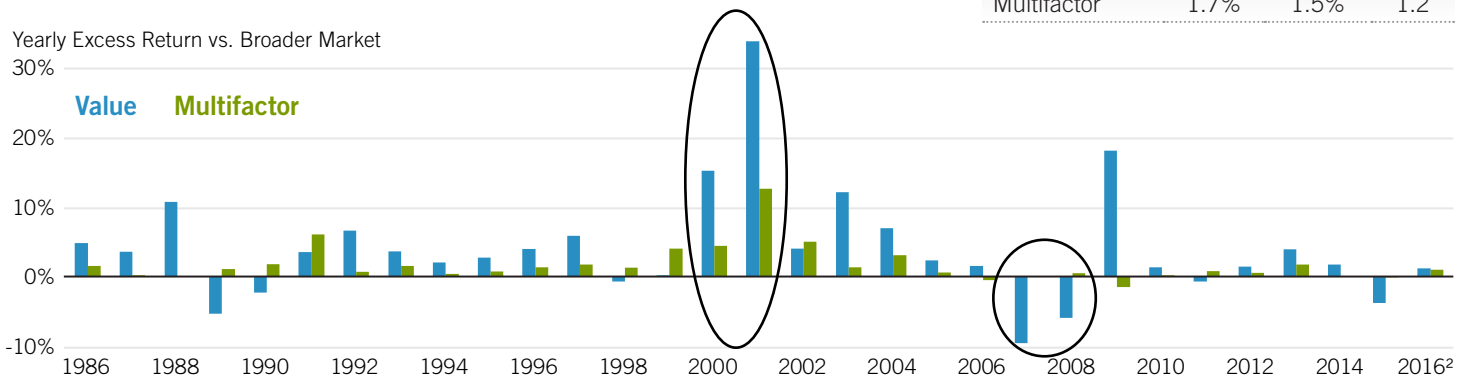
The long-term excess returns of each of the aforementioned factors are positive, indicating that they have outperformed over time (Exhibit 1). As an example, consider the value factor. Value stocks have outperformed the broader market (the equal-weighted Russell 1000 Index) by 3.4% annually since 1986, highlighting a potential benefit of adding value exposure to a portfolio. However, although value has delivered long-term excess returns, it has not outperformed all the time (Exhibit 2). For example, value stocks underperformed during the financial crisis of 2007–2008. Other factors have also experienced periods of underperformance, even though historically they've generated long-term excess returns. The good news is that most factors are generally not highly correlated with one another and, therefore, tend to pay off at different times. To lessen the impact of the periodic underperformance of individual factors, investors may consider strategic allocations to a combination of factors.

By combining factors, investors can benefit from the individual factor exposures and from diversification across factors, to create a portfolio with increased odds of performing well in a variety of market environments. A straightforward, equal-weighted approach to combining factors might be a good starting point for investors seeking long-term exposure to multiple factors. Exhibit 2 shows that the performance of an equal-weighted multifactor strategy may lag value alone when inexpensive stocks outperform—such as after the tech bubble in 2000 and 2001—but protects against losses to provide a less volatile return profile. This could lead to improved risk-adjusted returns over time. Although the average annual excess return of 1.7% for the multifactor portfolio was less than the 3.4% for value, a measure of its risk-adjusted return (information ratio) improves from 0.6 to 1.2.

Exhibit 2 Value Factor Portfolio vs. Equal-Weighted Multifactor Portfolio

Diversifying across multiple factors can help investors achieve more consistent performance over time.

	Excess Return	Tracking Error	Info. Ratio
Value	3.4%	5.2%	0.6
Multifactor	1.7%	1.5%	1.2



[2]Through Mar. 2016. Equal-weighted multifactor portfolio includes five factor portfolios: size, value, momentum, quality, and low volatility. See appendix for factor definitions. Excess return: compound average of yearly excess returns versus the equal-weighted Russell 1000 Index from Jan. 1986 through Mar. 2016. Tracking error: measures the variation of performance relative to the broader market (in this case, the equal-weighted Russell 1000 Index). Information ratio: measures risk-adjusted return (defined as excess return divided by tracking error). Past performance is no guarantee of future results. Source: FactSet, as of Mar. 31, 2016.

Exhibit 3 Historical Factor Returns

Although these factors have outperformed over the long term, each has underperformed over shorter periods.

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Div Yield	3%	2%	-1%	-6%	2%	9%	19%	10%	7%	-1%	2%	-3%	-1%	1%	4%	8%	2%	0%	-1%	-2%
Low Vol	1%	1%	0%	-3%	-1%	3%	10%	4%	2%	-5%	0%	-2%	5%	-3%	-4%	-9%	0%	1%	-1%	2%
Momentum	-1%	1%	5%	11%	8%	1%	0%	1%	4%	2%	0%	4%	3%	-3%	-6%	-9%	2%	3%	2%	3%
Quality	1%	3%	3%	5%	7%	6%	5%	1%	1%	0%	2%	3%	2%	0%	-3%	-1%	0%	0%	-1%	-1%
Size	0%	-3%	-4%	-4%	-4%	6%	3%	9%	3%	5%	0%	-3%	-5%	5%	9%	13%	0%	0%	1%	-3%
Value	3%	4%	3%	2%	5%	16%	16%	16%	7%	7%	4%	-2%	-5%	-3%	0%	5%	1%	1%	2%	0%
Equal-Weighted	1%	1%	1%	2%	3%	7%	7%	7%	4%	2%	1%	0%	0%	0%	0%	0%	1%	1%	1%	0%

Equal-weighted: combination of six factors. See appendix for factor definitions. Three-year rolling annualized excess returns rounded to the nearest percentage. Source: FactSet, as of Dec. 31, 2015.

Deciding the best way to allocate to factors and which combinations to consider depends on each investor's underlying investment philosophy and objective, including risk tolerance, time horizon, and desired investment outcome (e.g., capital appreciation, capital protection, income, etc.). Beyond a simple equal-weighted approach, investors might consider alternative factor combinations and weightings, optimized to reflect their investment styles or secular outlooks. For example, some investors believe in investing in high-quality, inexpensive stocks, which can be achieved by exposure to the quality and value factors. Others may have more of a "growth at a reasonable price" philosophy, which can be captured in part with the momentum and value factors. Further, based on a secular outlook—such as the demographic trend of baby boomers approaching retirement—investors may want to gain exposure to dividend-yielding stocks, for example, which stand to benefit from the growing retired segment of the population seeking income from their investments.

Cyclical exposure: Expressing an investment view

As we've discussed, individual factors are driven by different market dynamics and, therefore, tend to behave differently amid varying market and economic environments. Although certain factors have led to excess returns over the long term, no single factor works all the time, and each has experienced cycles of out- and underperformance (Exhibit 3). Therefore, by adjusting allocations to factor-based strategies over time, investors may be able to express market or investment views. Of course, effective (and consistent) factor timing—like market timing—can be challenging, and some investors may prefer to remove this complexity with consistent, diversified exposure to a combination of factors. However, some argue that adjusting exposures through time, based on certain considerations—such as where the economy stands within the business cycle—may help enhance returns.

Historical analysis of the business cycles since 1986 shows that the relative performance of factors has tended to rotate as the overall economy shifts from one business cycle phase to the next (Exhibit 4). Each cycle is different—and 30 years

Exhibit 4 Factors and the Business Cycle

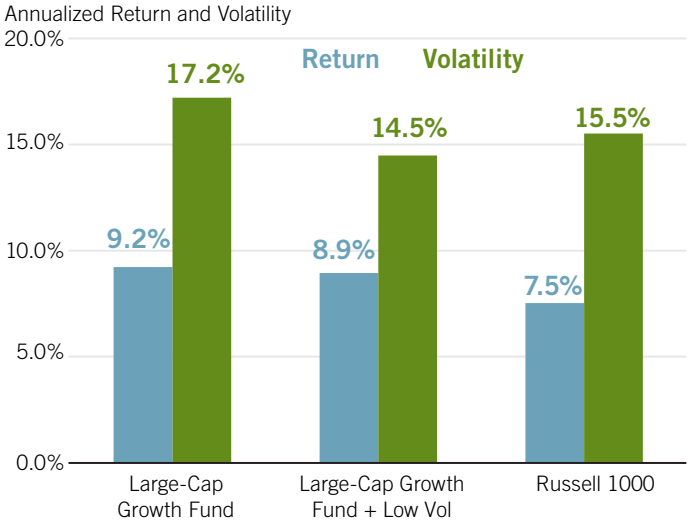
Adjusting a portfolio's factor exposures, based on how they've performed in past cycles, may enhance returns.

	Early	Mid	Late	Recession
Value	++	++		
Div Yield	++			++
Size	+	+		
Momentum		++	+	
Quality			+	+
Low Vol	– –	–		++

Unshaded (white) portions above suggest no clear pattern of over- or underperformance vs. the broader market. Double +/– signs indicate that the sector is showing a consistent signal across all three metrics: full-phase average performance, median monthly difference, and cycle hit rate. A single +/– indicates a mixed or less consistent signal. Analysis based on historical factor performance during business cycles since 1986. Factor performance patterns may vary in future cycles. Source: Fidelity Investments (Asset Allocation Research Team).

Exhibit 5 The Addition of Low Volatility

Factor-based strategies can complement active funds by offsetting risk exposures, improving risk-adjusted returns.



Large-cap growth fund represented by the median fund by return volatility within the top quintile of 10-year performance in the Morningstar large-cap growth category. Large-cap growth fund + low vol is an equal-weighted portfolio of this active large cap growth fund and a low-volatility factor portfolio. Annualized returns from Jul. 2006 through Jun. 2016. Volatility represented by standard deviation (a measure of return variance). A portfolio with a lower standard deviation exhibits less volatility. See appendix for low-volatility portfolio details. Past performance is no guarantee of future results. Sources: Morningstar, MSCI, FactSet, as of Jun. 30, 2016.

is a relatively short period of history—but these patterns may offer clues for investors when they consider adding exposure to the factors that have historically outperformed during the cycle phases they believe may lie ahead. For example, value strategies have consistently outperformed during early- and mid-cycle phases, as economic growth turns positive and inexpensive or beaten-down stocks tend to outperform. During mid-cycle phases, when the market as a whole tends to move in a more trending fashion, momentum strategies have historically outperformed. And when the economy peaks during late-cycle phases and contracts during recessions, high-quality, low- volatility, and high-dividend-yielding stocks—all more defensive in nature—have tended to outpace the market.

Timing the precise turning points within the business cycle may not be necessary. It may suffice for investors to consider where the economy might stand over the next few years, and understand which factors have historically fallen in or out of favor during those phases. For more detail on how the business cycle can influence investment performance, see Fidelity *Leadership Series* article "The Business Cycle Approach to Asset Allocation" (Sep. 2014).

Investors might also consider other criteria or variables to determine when to tilt toward or away from certain factors. Examples include the valuation of a factor, the momentum of a factor's own recent returns, and even the dispersion within the factor itself (for example, studying how wide valuation multiples are, from cheapest to most expensive).

Portfolio construction: Fine-tuning risk exposures

Investors and advisors often want to be aware of the factor over- or underweights in their portfolios in order to better manage potential sources of return and risk. Factor-based strategies can provide the tools necessary to fine-tune these exposures, mitigate certain risks, or adjust portfolio characteristics.

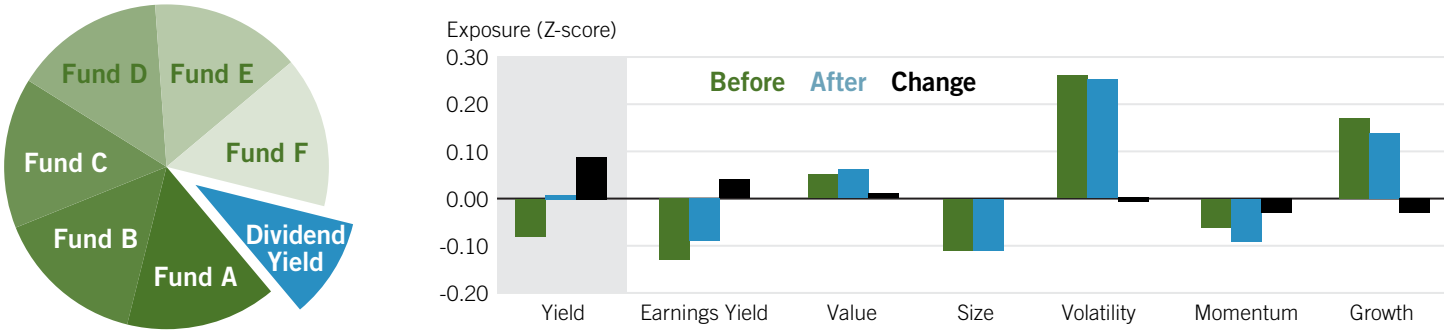
For example, an investor may elect to hold a mutual fund because of a manager's stock-picking skill. However, the manager may have a particular investment bias that the investor would like to offset. Exhibit 5 shows how risk-adjusted returns can be improved by adding low-volatility exposure to complement a large-cap growth fund that has outperformed the broader market, but has high incidental volatility exposure. Although the performance of the low-volatility strategy may be affected by the business cycle (as we have shown), and possibly even interest rates that may influence lower-volatility sectors, this combination should counterbalance the exposure to higher volatility and reduce the risk of the overall portfolio. Note that this combined portfolio boasts similar returns but significantly less volatility than the fund on its own, and higher returns with less volatility than the benchmark. Employing a factor-based strategy in this way can reduce the level of risk in a portfolio and still take advantage of the active manager's effective stock picking and historical outperformance.

Further, a portfolio with multiple holdings can often result in aggregate factor exposures that don't necessarily reflect an investor's desired positioning, current investment view, or intended risk profile. In this instance, factor-based strategies can be used to offset factor over- or underweights and reduce incidental risks, to better control even a multifund portfolio's potential sources of risk and return.

As an example, Exhibit 6 shows a multifund portfolio's exposure to a number of different factors. The portfolio

Exhibit 6 The Addition of Dividend Yield to a Multifund Portfolio

By adding factor-based strategies to a portfolio of funds, investors can manage aggregate risk exposures.



Data show Barra style exposures (based on a risk model commonly used to analyze portfolio positioning). Hypothetical portfolio holds six active equity mutual funds. See appendix for Dividend Yield factor definition. Z-score: number of standard deviations (measures of variation) above or below the exposures of the equal-weighted Russell 1000. Past performance is no guarantee of future results. Sources: MSCI, FactSet, as of Aug. 16, 2016.

contains six underlying active funds, and incidentally results in less yield exposure than the broader market. For an investor seeking more income or aiming to align portfolio exposures with an underlying benchmark, adding a dividend-yield factor strategy may be a compelling option. Complementing this group of funds with a dividend strategy can neutralize the risk exposure and increase the portfolio's overall dividend yield, bringing it more in line with the investor's objective.

Investment implications

There are several ways investors can incorporate factor-based strategies into their broader portfolios as tools to add incremental returns, reduce risk, or achieve a desired investment outcome. Investors may opt for a strategic allocation to a single factor or to a combination of factors that suits their particular investment objective. Investors may also aim to vary their allocations to factor-based strategies over time, depending on their view of the economic cycle or other inputs they find useful for timing factor tilts. Finally, some may employ a risk-management approach to fine-tune a portfolio's aggregate exposures. Although the applicability of each method will depend on each investor's overarching objective, investment philosophy, and desired outcome, factor-based strategies can be useful tools for enhancing the investment process. (See Fidelity *Leadership Series* article "How to Evaluate Factor-Based Investment Strategies," Sep. 2016, for criteria to consider when performing due diligence on these strategies.)

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Appendix

All factor portfolio returns shown are equal-weighted and sector neutral, assume the reinvestment of dividends, and exclude fees and other implementation costs. **Size** (small-cap) returns are yearly returns of the equal-weighted bottom quintile (by market capitalization) of the Russell 1000 Index. **Value** composite returns shown are yearly returns of a combined average ranking of stocks in the equal-weighted top quintile (by book/price ratio) and stocks in the equal-weighted top quintile (by earnings yield) of the Russell 1000 Index. **Momentum** returns are yearly returns of the equal-weighted top quintile (by trailing 12-month returns) of the Russell 1000 Index. **Quality** returns are yearly returns of the equal-weighted top quintile (by return on equity) of the Russell 1000 Index. Return on equity is a measure of profitability that calculates how many dollars of profit a company generates with each dollar of shareholders' equity. **Low-volatility** returns are yearly returns of the equal-weighted bottom quintile (by standard deviation of weekly price returns) of the Russell 1000 Index. Standard deviation is a measure of return dispersion. A portfolio with a lower standard deviation exhibits less return volatility. **Dividend yield** returns are yearly returns of the equal-weighted top quintile (by dividend yield) of the Russell 1000 Index.

Definitions

Beta: a measure of risk that represents how a security has responded in the past to movements of the securities market.

Smart Beta: an alternative investment methodology to typical cap-weighted benchmark investing. There is no guarantee that a smart beta or factor-based investment strategy will enhance performance or reduce risk.

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It is not possible to invest directly in an index. All indexes are unmanaged.

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Index definition

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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