

# Putting Factors to Work

## Three approaches to consider when implementing factor-based investment strategies

### KEY TAKEAWAYS

- A strategic allocation to a single factor-based strategy, or to a combination of factors, may 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.
- Factor-based strategies may also be useful in portfolio construction and risk-management as tools to help investors 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. Thus, investors may wish to consider employing factors to build or enhance their portfolios. But implementing factor-based investment strategies may be perceived as challenging, and some investors may be unsure how best to do so. In this article, we highlight 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.

An aerial photograph of agricultural fields. The top portion shows a field of yellow flowers, likely rapeseed. Below that is a large field of green corn. At the bottom is a field of brown, harvested crops, possibly soybeans. The fields are separated by dirt roads and drainage ditches.

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Three Approaches to Factor Investing

Strategic Exposure

Strategic allocations to factors may 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 particular investment view.

Portfolio Construction

Investors and advisors can use factor-based strategies to fine-tune their exposures and better align their portfolios with their intended investment objectives and risk profiles.

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 details, see Fidelity article “An Overview of Factor Investing”). In consideration of these potential long-term benefits, a strategic allocation to a single or a combination of factors may be appealing.

Exhibit 1 outlines the historical enhanced risk and return characteristics of hypothetical individual factor portfolios, including value, dividend yield, momentum, quality, low volatility, and size (for details on our methodology, please refer to page 3). As an example, consider the value factor: Value stocks have outpaced the broader market (as represented by the equal-weighted Russell 1000 Index) by 3.0% 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 of the time (Exhibit 2). For instance, 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

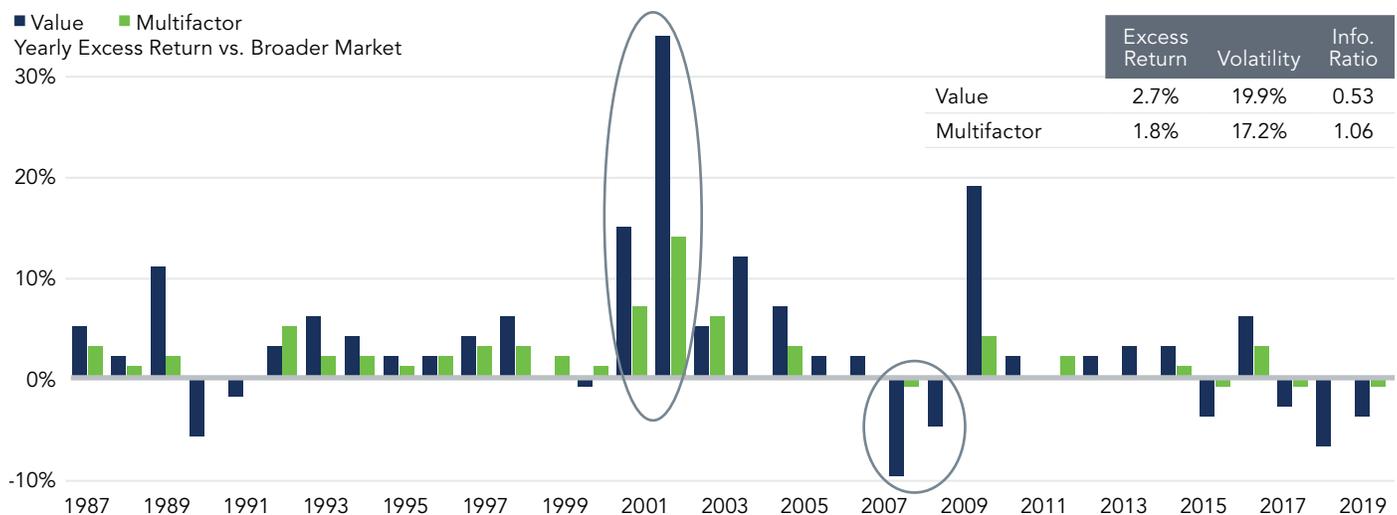
EXHIBIT 1: Factors historically have shown potential to enhance the risk/return profiles of equity portfolios over time.

	Excess Return	Volatility	Information Ratio
Value	3.0%	19.8%	0.59
Dividend Yield	2.0%	17.1%	0.28
Momentum	2.2%	17.3%	0.31
Quality	1.7%	16.8%	0.47
Low Volatility	0.8%	13.5%	0.14
Size	0.6%	23.5%	0.07
Broader Market	–	17.3%	–

Excess return, volatility, and information ratio figures shown are annualized statistics. Past performance is no guarantee of future results. For illustrative purposes only. Results do not represent actual or future performance of any investment option or strategy. Hypothetical factor portfolio returns are gross of investment fees, implementation and rebalancing costs, and taxes. Market exposure to factors collectively is neutral by definition. All indexes are unmanaged. You cannot invest directly in an index. Annualized excess return relative to the broader market (equal-weighted Russell 1000 Index). All individual factor portfolios are equal weighted and compared with the Russell 1000 Index (equal-weighted) to capture pure factor exposures and eliminate unintended exposures, such as size bias. Volatility: standard deviation of absolute returns. Information ratio: a measure of risk-adjusted returns. See page 3 for investment terms and details on our methodology. Period studied: 1986–2019. Source: FactSet, as of 12/31/19.

**EXHIBIT 2: Diversifying across multiple factors can help investors achieve more consistent performance over time.**

Value Factor Portfolio vs. Equal-Weighted Multifactor Portfolio



Through 12/31/19. Equal-weighted multifactor portfolio includes six hypothetical factor portfolios: size, value, momentum, quality, dividend yield, and low volatility. Excess return: compound average of yearly excess returns versus the equal-weighted Russell 1000 Index from 1/1/86 through 12/31/19. Broader Market: Russell 1000 Index, equal-weighted. Information ratio: measures risk-adjusted return (defined as excess return divided by tracking error). Tracking error: measures the variation of performance relative to the broader market (here, the equal-weighted Russell 1000 Index). Past performance is no guarantee of future results. Source: FactSet, as of 12/31/19.

**Methodology**

All individual factor portfolios are sector neutral, equal-weighted, and compared with an equal-weighted benchmark in an effort to capture pure factor exposures and eliminate unintended exposures, such as size bias. Factor portfolios and indexes assume reinvestment of dividends, exclude investment fees, implementation and rebalancing costs, and taxes, and were rebalanced monthly. Size (small cap) returns are annualized returns of the equal-weighted bottom quintile (by market capitalization) of the Russell 1000 Index. Value composite returns are annualized 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. Momentum returns are annualized returns of the equal-weighted top quintile (by trailing 12-month returns) of the Russell 1000 Index. Quality returns are annualized 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 the dollars of profit a company generates with each

dollar of shareholders’ equity. Low-volatility returns are annualized returns of the equal-weighted bottom quintile (by standard deviation of weekly price returns) of the Russell 1000 Index. A portfolio with a lower standard deviation exhibits less return volatility. Dividend yield returns are annualized returns of the equal-weighted top quintile (by dividend yield) of the Russell 1000 Index.

**Investment terms**

- Excess return:** Return relative to the broader market (in this case, the equal-weighted Russell 1000 Index). A positive excess return denotes outperformance.
- Beta:** A measure of risk that represents how a security has responded to market movements in the past.
- Information ratio:** A measure of risk-adjusted return that assesses a portfolio’s returns in excess of a benchmark compared with the volatility of those excess returns, or tracking error. A higher information ratio denotes better risk-adjusted returns.
- Standard deviation:** A statistical measure of how much a portfolio’s return varies over time. The more variable (volatile) the returns, the higher the standard deviation.

most factors are generally not highly correlated with one another and, therefore, tend to pay off at different times.

In seeking to lessen the impact of the periodic under-performance 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 outperformance 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 has lagged value alone when inexpensive stocks have outperformed – such as after the tech bubble in 2000 and 2001 – but protected against losses to provide a less volatile return profile. Although the average annual excess return of 1.8% for the multifactor portfolio was less than the

2.7% for value, a measure of its risk-adjusted return (information ratio) improved from 0.53 to 1.06.

Deciding the best way to allocate to factors and which combinations to consider depends on each investor’s underlying investment philosophy and objectives, including risk tolerance, time horizon, and desired investment outcome (see Fidelity companion article “Combining Factors to Target Specific Investment Outcomes”). Beyond a simple equal-weighted approach, investors might consider alternative factor combinations and weightings, adjusted to reflect their investment styles or secular outlooks. For example, some investors believe in investing in a mix of high-quality and inexpensive stocks, which may be achieved by exposure to the quality and value factors. Others may seek to enhance risk-adjusted returns, perhaps by emphasizing historically complementary factors such as value and momentum in their portfolio. Further, based on a secular outlook – such as the demographic trend of baby

**EXHIBIT 3: Although these factors have outperformed over the long term, each has underperformed over shorter periods.**

Historical Factor Returns Versus the Russell 1000 Index (Equal-Weighted)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Dividend Yield	24.5	34.2	-6.2	61.5	25.0	14.7	19.8	13.9	-29.7	113.6	28.7	5.9	19.7	41.0	14.6	3.1	26.0	22.6	-0.5	30.9
Value	15.5	21.7	-9.8	57.0	22.7	12.4	16.6	10.1	-42.1	71.5	28.1	2.6	19.0	40.4	14.2	1.9	24.1	21.9	-6.3	29.7
Quality	6.3	20.1	-13.3	43.3	22.7	12.0	16.1	2.9	-42.7	69.7	26.4	0.9	18.9	38.8	13.5	-3.8	21.9	18.7	-8.4	29.2
Low Volatility	6.0	9.0	-14.7	43.2	21.0	9.8	15.2	2.7	-43.5	53.8	24.3	-2.2	17.7	36.5	11.6	-5.1	16.4	17.2	-8.6	28.1
Broader Market	0.4	5.2	-16.0	39.7	18.9	7.7	14.9	-4.4	-44.1	47.7	23.8	-2.9	16.6	34.7	10.9	-6.7	15.2	15.9	-9.1	28.0
Size	-3.8	0.2	-20.1	35.6	18.8	6.6	14.2	-6.4	-47.7	23.0	22.2	-3.6	16.5	33.3	9.9	-6.9	11.0	14.8	-14.9	25.8
Momentum	-7.2	-4.7	-25.6	28.1	18.4	3.7	9.3	-6.9	-47.8	20.1	18.5	-8.7	14.6	30.1	7.4	-11.6	7.5	12.4	-15.6	25.7

Broader Market represented by the Russell 1000 Index (equal-weighted). Past performance is no guarantee of future results. For illustrative purposes only. Results do not represent actual or future performance of any investment option or strategy. Hypothetical factor returns are gross of investment fees, implementation and rebalancing costs, and taxes. See page 3 for details. All indexes are unmanaged. You cannot invest directly in an index. Period studied: 2000–2019. Source: FactSet, as of 12/31/19.

boomers entering retirement – investors may want to gain exposure to dividend-yielding stocks, for example, which could benefit from the growing retiree 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, thus, tend to behave differently amid varying market and economic conditions. While, historically, all the factors we are examining have provided excess return over the long term, no single factor works all the time, and each has experienced cycles of out- and underperformance (Exhibit 3). It follows, then, that by adjusting allocations to factor-based strategies over time, investors may be able to dynamically express investment views based, for example, on where the economy stands in the business cycle. Of course, effective 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.

Historical analysis of the business cycles since 1986 shows that the relative performance of factors has tended to rotate as the overall economy shifted from one business cycle phase to the next (Exhibit 4). Each cycle is different – and 30 years is a relatively short time frame – but these patterns may offer clues for investors when they consider adding exposure to the factors that historically have outperformed during the cycle phases they believe may lie ahead.

For example, using data from Exhibit 2, we found that value strategies have outperformed during the early and mid cycles, as economic growth turns positive and inexpensive or beaten-down stocks tend to perform well. During the mid-cycle phase in particular, when the market as a whole tends to move in a more trending fashion, momentum strategies historically have outperformed. And when the economy peaks during

**EXHIBIT 4: Adjusting a portfolio’s factor exposures, based on how they’ve performed in past cycles, may enhance returns.**

Factors and the Business Cycle

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

The above business cycle framework is based on a combination of quantitative and qualitative inputs. Unshaded (white) portions above suggest no clear pattern of over- or underperformance vs. the broader market. Double +/- signs indicate that the factor 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).

the late-cycle phase and contracts during recession, high-quality, low-volatility, and high dividend-yielding stocks – all more defensive in nature – have often beaten the market.

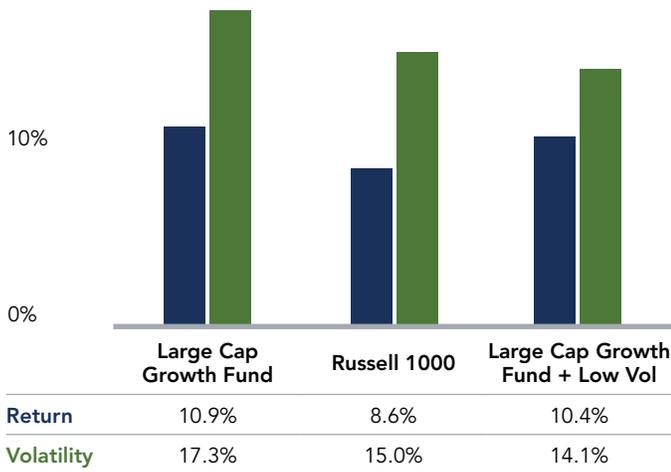
Attempting to time precise business-cycle turning points can prove hazardous – and may not be necessary. It may suffice for investors to consider where the economy might stand over the next few years and to understand which factors have historically fallen in or out of favor during those phases. (For more details on how the business cycle can influence investment performance, see Fidelity article “The Business Cycle Approach to Asset Allocation.”)

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 – examining spreads among valuation multiples, from cheapest to most expensive, for example.

**Exhibit 5: Factor-based strategies may complement active funds by offsetting risk exposures, improving risk-adjusted returns.**

The Addition of Low Volatility

Annualized Return and Volatility  
20%



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, 7/31/06 through 12/31/19. 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 12/31/19.

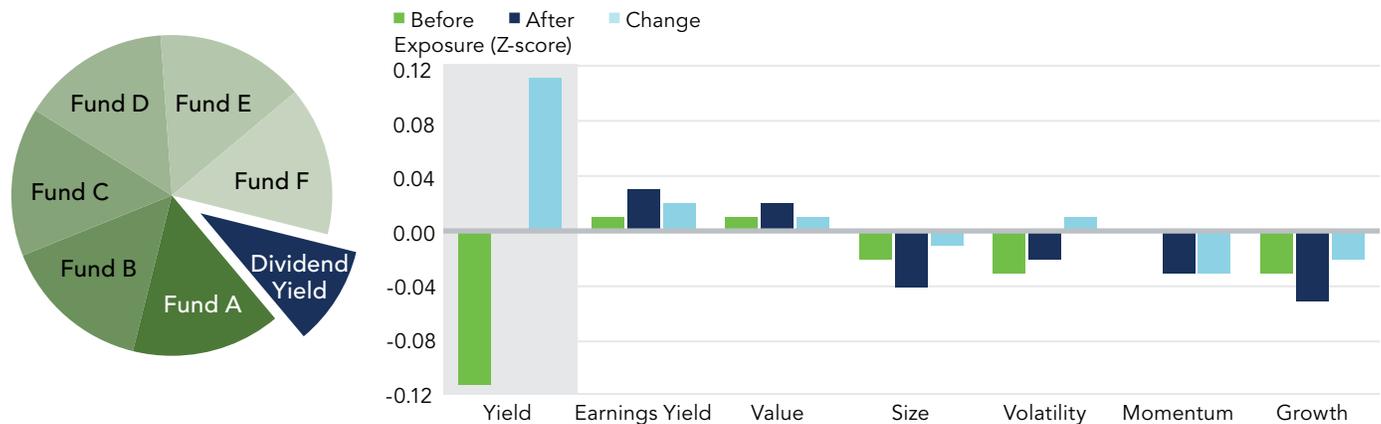
**Portfolio construction: Fine-tuning risk exposures**

Investors and advisors may want to keep abreast of factor over- and underweights in their portfolios to better manage potential sources of return and risk. Factor-based strategies may provide tools necessary to fine-tune these exposures, mitigate certain risks, or otherwise adjust portfolio characteristics.

For example, an investor may elect to hold a mutual fund because of a manager’s stock-picking skill. But that manager also may have a particular investment bias the investor would like to offset. Exhibit 5 shows how risk-adjusted returns were improved by adding low-volatility exposure to complement a large cap growth fund that (using “perfect foresight”) had outperformed the broader market, but also experienced high incidental volatility. Although, as we have shown, performance of the low-volatility strategy may have been influenced by the business cycle generally – and possibly by interest rates, insofar as they affect individual sectors with lower volatility – this combination counterbalanced the exposure to higher volatility and reduced the portfolio’s overall risk.

**Exhibit 6: By adding factor-based strategies to a portfolio of funds, investors can manage aggregate risk exposures.**

Effects of Adding Dividend Yield to a Multifund Portfolio



Data show exposures to MSCI Barra style factors (based on a risk model commonly used to analyze portfolio positioning). Thus, factor metrics shown above (earnings yield, growth, value, size, momentum, and volatility) differ from those highlighted elsewhere in this article. Earnings yield: last 12 months of earnings per share divided by price per share. Hypothetical portfolio holds six active equity mutual funds. See page 3 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 Index. Past performance is no guarantee of future results. Sources: MSCI, FactSet, as of 12/31/19.

Note that this combined portfolio delivered returns similar to those of the fund on its own, but with much lower volatility. The combined portfolio also boasted higher returns with lower volatility than the benchmark. Employing a factor-based strategy in this way may help reduce the level of benchmark-relative risk in a portfolio and still allow an investor to take advantage of an 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 views, or intended risk profile. In this instance, factor-based strategies may 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.

By way of example, Exhibit 6 shows a multifund portfolio's exposure to a number of different factors. The portfolio contains six underlying active funds, and incidentally accrued 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 present a compelling option. Complementing this group of funds with a dividend strategy neutralized the risk exposure and enhanced the portfolio's dividend yield, bringing it more in line with the investor's objective. (Note: The results and risk/return profiles of actual factor-based strategies

may vary based on implementation. Depending on the portfolio construction techniques employed, factor-based strategies may have embedded risks, such as sector overweights or size biases, which could affect the broader exposures of an overarching portfolio. Thus, when seeking to adjust risk exposures with factor-based investments, investors should have a solid understanding of the strategies' portfolio construction to avoid introducing unintended risks.)

### Investment implications

When seeking to add incremental return, reduce risk, or achieve a desired investment outcome, investors can incorporate factor-based strategies in a broader portfolio in several ways. Investors may opt for a strategic allocation to a single factor, or to a combination of factors, that suits their particular investment objectives. 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 represent potentially useful tools for enhancing the investment process. (See Fidelity article "How to Evaluate Factor-Based Investment Strategies" for criteria to consider when performing due diligence on these strategies.)

### A note on factor portfolio construction

Research offers many approaches to constructing factor portfolios. The hypothetical portfolios shown in this article reflect a simplified approach to capturing factor signals, one used by academics and practitioners throughout the industry. Results of actual factor-based strategies may vary based on implementation. Depending on the portfolio construction techniques employed, factor-based strategies may have other embedded risks, such as sector overweights or size biases. Please see Fidelity article "How to Evaluate Factor-Based Investment Strategies" for more details.

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**Past performance is no guarantee of future results. It is inherently difficult to make accurate dividend growth forecasts and the outcomes from those forecasts are not guaranteed.**

**There is no guarantee that a factor-based investing strategy will enhance performance or reduce risk. Before investing, make sure you understand how a factor investing strategy may differ from a more traditional index-based approach. Depending on market conditions, factor-based investments may underperform compared with investments that seek to track a market capitalization-weighted index.**

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

#### 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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