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An Overview of Factor Investing

The merits of factors as potential building blocks for portfolio construction

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KEY TAKEAWAYS

- Factors such as size, value, momentum, quality, dividend yield, and low volatility are at the core of “smart” or “strategic” beta strategies, and are investment characteristics that have enhanced portfolios over time.
- Factor performance tends to be cyclical, and factor returns have generally not been highly correlated with one another historically, so investors have benefited from diversification by combining multiple factor strategies.
- Factor-based strategies may help investors meet certain investment objectives – such as potentially improving returns or reducing risk over the long term.

Factor investing has received considerable attention recently, primarily because factors are the cornerstones of “smart” or “strategic” beta strategies that have become popular among individual and institutional investors. In fact, these strategies had amassed more than \$1.8 trillion in assets through the end of 2022.¹ But investors have been employing factor-based techniques in some form for decades, seeking the potential enhanced risk-adjusted-return benefits of certain factor exposures.

In this article, we define factor investing and review its history, examine six common factors and the theory behind them, show their performance and cyclicity over time, and discuss the potential benefits of investing in factor-based strategies. Our goal is to provide a broad overview of factor investing as a framework that incorporates factor-exposure decision-making into the portfolio construction process. This article is the first in a series on factor investing.

A brief history of factor investing

Beta is born

The seeds of factor investing were sown in the 1960s, when the capital asset pricing model (CAPM) was first introduced.² The CAPM posited that every stock has some level of sensitivity to the movement of the broader market – measured as beta. This first and most basic factor model suggested that a single factor – market exposure – drives the risk and return of a stock. The CAPM suggested that beyond the market factor, what are left to explain a stock’s returns are idiosyncratic, or company-specific, drivers (e.g., earnings beats and misses, new product launches, CEO changes, accounting issues, etc.).

Beta gets “smart”

In the decades that followed, academics and practitioners discovered other factors and exposures that drive the returns of stocks.³ Stephen Ross

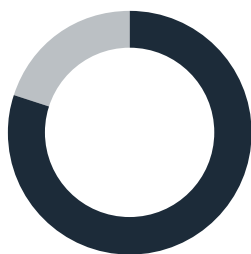
introduced an extension of the CAPM called the arbitrage pricing theory (APT) in 1976, suggesting a multifactor approach may be a better model for explaining stock returns.⁴ Later research by Eugene Fama and Kenneth French demonstrated that besides the market factor, the size of a company and its valuation are also important drivers of its stock price.⁵

Factors can also be considered anomalies, since they are deviations from the “efficient market hypothesis,” which suggested it is impossible to consistently outperform the market over time because stock prices immediately incorporate and reflect all available information.

And while some such anomalies have indeed generated excess returns over time, other factors explain the risk of stocks but have not necessarily provided a return premium. As an example, many would argue that CAPM beta, almost by definition, does not deliver excess returns over time; it measures only a stock’s sensitivity to market movement and may instead be a risk factor. Therefore, exposure to market beta alone is not a way to outperform. Investors seeking returns in excess of the market may consider exposure to other factors (or betas) that have exhibited long-term outperformance: “smart” or “strategic” betas.

Investment managers – quantitative investors in particular – have employed these factors over the years to build and enhance their portfolios. Once the relevant factors that drive return and risk are identified,

The Evolution of Factor Investing



- Market
- Company-Specific

CAPM: Stock returns are driven by exposure to the market factor (beta) and company-specific drivers



- Market
- Company-Specific
- Style
- Size

Fama and French account for additional factors: size and style



- Market
- Company-Specific
- Size
- Volatility
- Quality
- Dividend Yield
- Momentum
- Value

Research proves the case for multiple factors as components of stock returns and risk

A note about factor-based investment strategies

Factor-based investments are founded on the systematic analysis, selection, weighting, and rebalancing of portfolios, in favor of stocks with certain characteristics that have been proven to enhance risk-adjusted returns over time. Most commonly, investors gain exposure to factors using quantitative, actively managed funds, or rules-based ETFs designed to track custom indexes.

There are many approaches to constructing factor portfolios. The hypothetical portfolios shown later in this article are intended to reflect a simplified approach to capturing factor signals, one that has been used by academics and practitioners throughout the industry. The risk/return profiles of actual factor-based strategies may vary based on factor definitions and implementation. As is true when investing in equities (or in any asset class), there are risks associated with factor-based strategies. For example, depending on the portfolio construction techniques employed, factor-based strategies may have embedded risks, such as sector overweights or size biases.

exposures can be measured on an ongoing basis to ensure a portfolio is best structured to take advantage of these factors. Fundamental investors also use factors widely, either as a means to generate new stock ideas, or to monitor and control intended or unintended exposures in their funds.

Six key factors

While factor definitions and the metrics used to capture them can vary, the following six factors have been identified by academics and widely adopted by investors over the years as key exposures in a portfolio.

1. Size

In pinpointing the first of their two identified factors, Fama and French demonstrated that a return premium existed for investing in smaller cap stocks. This could be due to their inherently riskier nature: Smaller companies are typically more volatile and have a higher risk of bankruptcy, and investors expect to be compensated for taking on that additional level of risk.

Exposure to small cap stocks can be achieved relatively easily by using standard market capitalizations. For most investors, holding a small cap fund or ETF, for example, is a straightforward and relatively efficient way to harvest the small cap premium. However, the inherently riskier nature of investing in smaller companies is important to bear in mind.

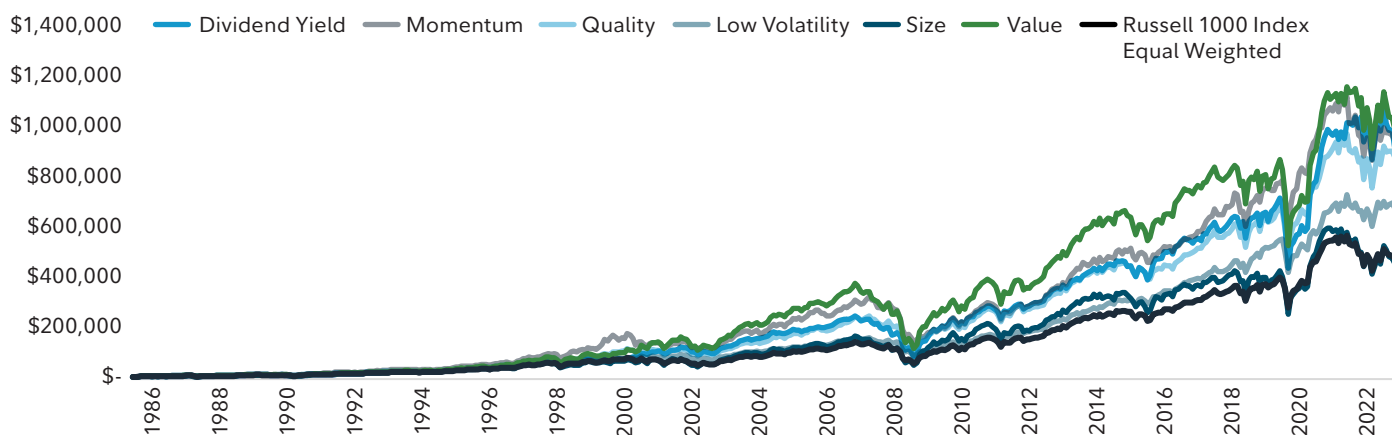
2. Value

The second factor introduced in the Fama-French model was value, suggesting that inexpensive stocks have outperformed more expensive ones. Research on the field of value investing stretches back many decades. In 1949, Benjamin Graham urged investors to buy stocks at a discount to their intrinsic value.⁶ He argued that expensive stocks with lofty expectations leave little room for error, while cheaper stocks that can beat expectations may afford investors more upside.

One view is that value investing has worked because stocks follow earnings over time. Investors tend to be overly optimistic about expensive, high-growth stocks and overly pessimistic about cheap, slower-growth stocks. When cheap stocks report higher-than-expected earnings (even versus low expectations), they can outperform as a result of the market's improved optimism in their earnings potential. Empirical results also seem to indicate that value investing has generated excess returns over time. Fama and French demonstrated that stocks with high book-to-price ratios outperformed stocks with lower ratios. Many popular value indexes still place a heavy emphasis on that definition, and therefore exposure to that particular valuation metric is easy to gain with available products. Yet, as is the case with many factors, there

EXHIBIT 1: These six hypothetical factor portfolios have historically outperformed over time.

Growth of \$10,000 in Hypothetical Factor Portfolios vs. the Broader Market (1/1/85–6/30/23)



	Size	Value	Momentum	Quality	Dividend Yield	Low Volatility	Equal Weight	R1000
Annual Return	11.06%	13.34%	13.16%	13.24%	12.96%	13.10%	12.84%	11.12%
Excess Return	-0.06%	2.22%	2.04%	1.85%	1.98%	1.01%	1.72%	-
TE	9.04%	5.51%	7.33%	3.55%	7.42%	6.06%	1.86%	-
Volatility	24.51%	21.05%	17.69%	17.55%	16.67%	14.08%	18.08%	18.10%
Information Ratio	-0.01	0.40	0.28	0.52	0.27	0.17	0.93	-
Sharpe	0.45	0.63	0.74	0.74	0.70	0.86	0.71	0.61

Past performance is no guarantee of future results. For illustrative purposes only. Hypothetical factor portfolio returns are gross of investment fees, implementation and rebalancing costs, and taxes. All indexes are unmanaged. You cannot invest directly in an index. All individual factor portfolios are equal weighted and are compared to an equal-weighted benchmark to capture pure factor exposures and eliminate unintended exposures, such as size bias. Annualized excess return relative to the broader market (equal-weighted Russell 1000 Index). See Methodology for details. Volatility: standard deviation of absolute returns. Information ratio: a measure of risk-adjusted returns. See Glossary for definitions. Period studied: 1/1/85–6/30/23. Source: FactSet, as of 6/30/23.

are many different ways to define value. For example, investors may examine earnings, sales, or cash flows to judge whether a stock appears inexpensive. Exhibit 1 shows that a stock portfolio created using a composite of high book-to-price ratio and high earnings yield outpaced the broader market over time.

3. Momentum

The concept of momentum investing is similar in spirit to what technical analysts have been doing for decades, namely, examining price trends to forecast future returns. Empirical evidence of the momentum anomaly was first published in 1993 by Narasimhan Jegadeesh and Sheridan Titman, and demonstrated that stocks that had outperformed in the medium term

often continued to perform well, and vice versa for stocks that had lagged.⁷

The explanation for why momentum investing has worked has been a topic of much debate, but many make a behavioral argument that investors tend to underreact to improving fundamentals or company trends. It’s not until a stock is outperforming that it catches investors’ attention and they pile onto the trade. This dynamic allows winners to keep winning and momentum investing to work. The cycle tends to continue until there is a catalyst that causes it to stop (e.g., an earnings miss or overvaluation, indicating a negative fundamental change). A common way to measure momentum is to classify stocks by 12-month price returns, a strategy that has outperformed the broader market over time (Exhibit 1).

4. Quality

Although investors have been seeking high-quality companies for decades, empirical evidence validating the merits of this approach only emerged relatively recently. This may be due to the lack of consensus on how best to define “quality.” For example, Richard Sloan and Scott Richardson conducted important work suggesting that companies with higher earnings quality or lower accruals (roughly measured as the difference between operating cash flow and net income) have outperformed over time.⁸ Many observers agree, however, that higher profitability, more stable income and cash flows, and a lack of excessive leverage are all hallmarks of quality stocks. For a company to have higher margins and profits than its competitors, it must boast some competitive advantage. Competitive advantages tend to be sticky, and companies that have them are thus often able to earn higher profits than their peers over long periods of time. Put simply, companies that generate superior profits, possess strong balance sheets, and demonstrate stable cash flows should be able to consistently outperform over the long term. By examining only a single measure of quality – such as return on equity – Exhibit 1 illustrates that stocks that exhibited strong profitability outpaced the market over time.

5. Dividend Yield

The dividend yield factor is based on the concept that securities with higher yields have provided superior returns over time. In essence, this is the return investors expect to receive simply from the passage of time, based on the yield earned. Like other factors, the yield factor exists across asset classes and is often referred to as “carry” when applied to fixed income or currencies.

Evidence in support of the benefits of dividend yield has been published by a number of academics over the years, including by Edwin Elton, Martin Gruber, and Joel Rentzler, who found a persistent relationship between dividend yield and excess returns.⁹

Many dividend yield strategies simply screen companies based on their trailing dividend yields, while others attempt to include companies that

generate high dividend yield on a consistent basis by looking at other metrics such as dividend payout ratio. Exhibit 1 demonstrates that over longer periods of time, higher yielding companies have generated excess returns relative to the broader market.

6. Low Volatility

As the name suggests, the primary objective of a low-volatility approach is to own stocks that have lower risk or return volatility than the broader market, which has historically resulted in higher risk-adjusted returns. Considerable research has shown that low-volatility portfolios may also outperform the broader market over time. For example, work by Robert Haugen and James Heins stated that stock portfolios with less variance in monthly returns tended to produce higher returns on average than those that were “riskier.”¹⁰ (Also see Fidelity article, “Prudent Growth with Low-Volatility Equity Investing.”)

By classifying stocks in this way, investors have generated returns similar to the market over time, but with a less bumpy ride. The benefits of a low-volatility approach can also be achieved by investing in stocks with more stable revenues and earnings, which may be less susceptible to recessions and other macroeconomic events.

This approach is designed to perform best when volatility is high and markets decline rapidly, because lower-risk stocks tend to hold up better during down markets when investor uncertainty is elevated. Low-volatility portfolios have tended to experience smaller drawdowns, and investors have benefited from the compounding of positive excess returns in a down market. There are many ways to capture the low-volatility factor. One approach is to target stocks exhibiting low price volatility. Exhibit 1 shows that this expression of the low-volatility factor has narrowly outperformed the market over time, with less risk – leading to higher risk-adjusted returns.

The cyclicality of factor performance

While research into the field of factor investing is ongoing, these six factors have been broadly accepted as persistent drivers of returns over the long term. However, as is the case when investing in general, there are risks associated with factor-based strategies. And while these factors have been proven to enhance portfolios over long periods of time, their returns tend to be cyclical and no single factor has worked all the time.

Exhibit 2 illustrates how the performance leadership by individual factors has varied year to year. For example, small caps can underperform large caps for multiyear periods, as they did during the technology “bubble” in the late 1990s and during the financial crisis in 2007–08. Value stocks also fell out of favor during the high-growth tech bubble but managed to earn back their losses (and then some) in the years that followed. Swift changes in market direction are typically detrimental to momentum

strategies – such as in 2000, following the collapse of the tech bubble, and in 2009, following the rapid recovery from the financial crisis. Quality portfolios typically lag during low-quality rallies – when the most beaten-down stocks lead the market in a rebound, as they did in 2003. Finally, low-volatility stocks tend to underperform during market rallies following bear markets – such as in 2009. These performance swings can be unsettling to investors, causing them to sell and miss out on rebounding performance.

Even though their relationships have varied somewhat over time, most factors have not been highly correlated with one another historically – they are driven by different market anomalies and therefore tend to pay off at different times. For example, by definition, value and momentum strategies are poles apart. Value investors buy stocks that have declined in price and are cheap, while momentum investors buy stocks that have been on the rise and may continue to run.

EXHIBIT 2: Factor returns are cyclical and combining them may offer diversification benefits.

Hypothetical Annual Returns (%) of Factor Strategies versus the Broader Market

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
Size	61.6	Value 25.0	Momentum 15.2	Dividend Yield 20.6	Momentum 14.2	Low Volatility -28.9	Size 113.3	Size 28.0	Low Volatility 5.6	Size 19.6	Momentum 40.8	Low Volatility 14.5	Low Volatility 3.1	Dividend Yield 26.3	Momentum 21.8	Low Volatility -1.2	Low Volatility 30.9	Momentum 20.5	Dividend Yield 31.5	Dividend Yield -3.2	HIGHEST
Value	56.4	Dividend Yield 21.9	Value 11.8	Value 17.6	Quality 10.1	Broader Market -42.1	Dividend Yield 72.3	Momentum 27.9	Dividend Yield 2.9	Momentum 19.2	Size 40.4	Dividend Yield 13.4	Momentum 1.8	Size 23.8	Quality 21.4	Momentum -5.7	Quality 29.9	Broader Market 15.9	Value 29.3	Low Volatility -7.3	
Broader Market	43.4	Quality 21.7	Quality 10.9	Quality 16.0	Broader Market 2.7	Quality -42.3	Value 71.5	Value 26.2	Quality 1.2	Value 19.0	Value 38.9	Value 12.8	Broader Market -3.8	Value 21.3	Broader Market 18.7	Quality -8.1	Broader Market 29.2	Size 12.6	Quality 27.2	Value -11.9	
Momentum	42.9	Size 21.3	Broader Market 9.8	Low Volatility 15.6	Low Volatility 2.1	Dividend Yield -43.5	Broader Market 53.8	Broader Market 24.3	Broader Market -2.2	Broader Market 17.7	Broader Market 36.5	Quality 11.3	Quality -4.9	Low Volatility 16.6	Low Volatility 17.6	Dividend Yield -8.0	Dividend Yield 28.2	Quality 12.5	Low Volatility 24.0	Quality -12.5	
Dividend Yield	40.5	Low Volatility 19.0	Size 7.8	Broader Market 15.0	Size -4.5	Momentum -43.8	Quality 49.4	Dividend Yield 23.8	Value -3.2	Quality 16.9	Quality 35.2	Broader Market 10.9	Dividend Yield -7.3	Broader Market 15.3	Value 15.5	Broader Market -9.1	Momentum 28.1	Dividend Yield 7.6	Broader Market 22.3	Momentum -15.4	
Quality	36.1	Momentum 19.0	Low Volatility 7.2	Size 14.3	Dividend Yield -6.2	Value -47.9	Low Volatility 23.2	Quality 21.9	Momentum -3.5	Low Volatility 16.0	Low Volatility 33.2	Momentum 9.9	Value -7.6	Quality 11.2	Dividend Yield 14.2	Size -14.9	Size 26.1	Low Volatility 6.4	Size 19.8	Broader Market -17.7	
Low Volatility	28.4	Broader Market 18.4	Dividend Yield 3.6	Momentum 9.9	Value -6.9	Size -48.4	Momentum 20.2	Low Volatility 18.5	Size -8.6	Dividend Yield 14.4	Dividend Yield 29.1	Size 6.7	Size -11.5	Momentum 7.5	Size 12.4	Value -15.9	Value 25.6	Value 3.1	Momentum 19.5	Size -21.6	LOWEST

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 Methodology for details. All indexes are unmanaged. You cannot invest directly in an index. Period studied: 2000–2022. Broader market: equal-weighted Russell 1000 Index. Source: FactSet, as of 12/31/22.

The distinct cyclical nature of factor returns may tempt investors to try and time their exposures. Indeed, factor strategies can provide a useful tool for more tactically minded investors to target what they believe are the right factor exposures at the right time. But, similar to market timing, effective factor timing can be challenging, and diversifying across multiple factor strategies may be a sound option for long-term investors. (For more detail on how to implement factor-based strategies in a portfolio, see Fidelity articles, “Putting Factors to Work” and “Combining Factors to Target Specific Investment Outcomes.”)

Investment implications

Factor-based investment strategies can provide investors with targeted and streamlined access to factor exposures. It is important to note that the factor-investing universe is broad and extends beyond single-factor strategies targeting the six key factors addressed in this article. Many factor-based strategies provide exposure to multiple factors within one vehicle.

The factor-investing marketplace has become more crowded, and these strategies can vary significantly in how they are constructed and in how they perform. As a result, it can be a difficult investment landscape to navigate. For example, a naively constructed factor-based strategy may also contain unintended risks such as small cap biases or sector tilts that could alter the overall exposures of a broader portfolio. Further, some factor definitions and the best metrics to capture these exposures are still up for debate. (For more details, see Fidelity article, “How to Evaluate Factor-Based Investment Strategies.”)

Although not all factor-based strategies are created equal and careful evaluation may be required to select among them, academic research and historical performance have proven the case for factor strategies as potentially compelling components of a broader portfolio.

Methodology

All individual factor portfolios are equal weighted and are compared to an equal-weighted benchmark in an effort to capture pure factor exposures and eliminate unintended exposures, such as size bias. Factor portfolios are also sector neutral. Factor portfolios and indexes assume the 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 shown 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 Index. 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 how many 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. Standard deviation is a measure of return dispersion. 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.

Glossary

Excess return: Return relative to the broader market (in this case, the equal-weighted Russell 1000 Index). A positive excess return denotes outperformance.

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.

Information ratio: A measure of risk-adjusted return that assesses a portfolio's returns in excess of a benchmark compared to the volatility of those excess returns, i.e., tracking error. A higher information ratio denotes better risk-adjusted returns.

Endnotes

1. Includes in smart (or strategic) beta strategies, across all US Domiciled ETFs and Mutual Funds (as categorized by Morningstar). Source: Morningstar, as of 12/31/22. 2. Lintner (1965); Mossin (1966); Sharpe (1964); and Treynor (1961). 3. To be more technically precise, it should be noted that factors and exposures explain the variance of returns of stocks, but that distinction falls outside the scope of this paper. 4. Ross (1976). 5. Fama and French (1992). 6. Graham (1949). 7. Jegadeesh and Titman (1993). 8. Richardson, Sloan, Soliman, and Tuna (2005). 9. Elton, Gruber, and Rentzler (1983). 10. Haugen and Heins (1975).

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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

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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