Trend-following crisis alpha: Does it come from beta timing or market selection?

Proprietary research from Fidelity analyzes the drivers of crisis alpha in managed futures' trend-following strategies and argues that complementary approaches can be used to enhance strategy efficiency and stability without giving up defensiveness.

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Key takeaways

- Proprietary Fidelity research explores whether the performance of trend-following strategies is driven by the timing of beta exposures or the ability to select markets within each asset class to take relative value positions based on trend signals.
- This research follows a four-step framework:
  1. Defines prototypical characteristics of trend-following strategies and how they can be viewed as crisis alpha.
  2. Decomposes trend exposures into beta-timing and relative value portfolios, using a simple trend-following model.
  3. Studies how much each contributes or detracts from crisis alpha.
  4. Considers the benefits of enhancing a trend strategy by investing less in the cross-sectional trend portfolio while using other signals as potential drivers of relative value positioning.
- As expected, analysis across key metrics including risk-adjusted returns, correlation, and downside correlation, underscores the unique value of trend-following strategies as a complement to equity, with demonstrated historical ability to perform during periods of market dislocations.
- Importantly, the results suggest that it may be possible to keep the crisis alpha characteristics intact while enhancing trend strategies with a richer set of alpha signals in the relative value component of the portfolio.

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Introduction

The behavior of trend-following strategies has sometimes been referred to as "crisis alpha."[1] For the purposes of this paper, we will define several simple characteristics as emblematic of trend-following crisis alpha and then investigate whether they are driven by trend portfolios' timing of beta exposures (the timing of being long or short an asset class, and the sizing of the exposure) or from their ability to select markets within each asset class to take relative value positions based on trend signals. Some of the metrics we consider are average correlation to equities, downside correlation to equities, unconditional risk-adjusted return, and risk-adjusted return conditional on equities being down.

We find that the risk-taking in trend-following strategies is dominated by beta-timing decisions, which contribute over 76% of the risk of the simple trend-following strategy we use in this study. Mostly because beta timing decisions are the bulk of the risk, they drive most of the prototypical characteristics of trend-following strategies. We also find that compared with the relative value component, the beta-timing component of trend returns has more negative correlation to equities on average and is more negatively correlated in months when stocks are down. In addition, beta timing has a higher historical risk-adjusted return, both on average and conditional on stocks being down.

These results imply that it may be possible to keep the crisis alpha characteristics intact while also enhancing trend strategies with a richer set of alpha signals in the relative value component of the portfolio. Taking it one step further, there may

be an opportunity to further improve trend strategies by intentionally increasing exposure to trend-based, cross-sectional positions in the asset classes where they are most likely to generate return and equity diversification and dialing them back in asset classes where they are less accretive to crisis alpha.

This paper proceeds as follows. First, we define some prototypical characteristics of trend-following strategies and show how they can be viewed as "crisis alpha." Second, we define simple trend-following and long-only asset class portfolios to use as a laboratory for understanding where trend returns come from. Third, we decompose trend exposures into beta-timing and relative-value portfolios and study their characteristics—how much they contribute to or subtract from crisis alpha. Fourth, we consider enhancing a trend strategy by investing less in the cross-sectional trend portfolio, with other signals as potential drivers of relative value positioning.

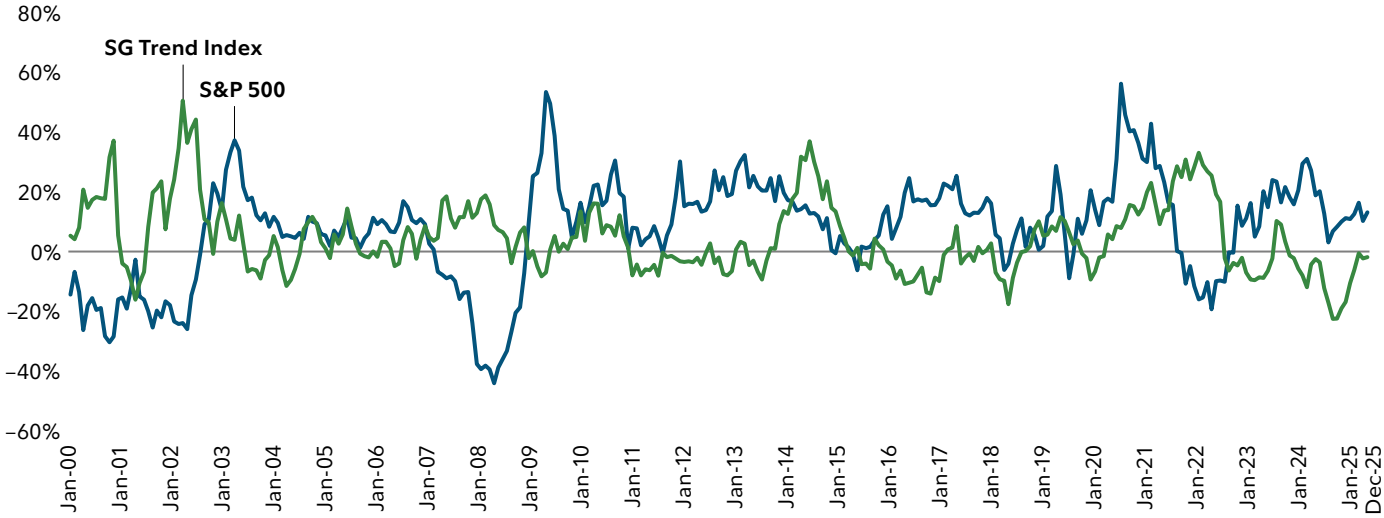
Part 1: Stylized facts about trend-following strategies using an index of historical manager returns

One of the most widely accepted benchmarks for trend-following strategies is SG Trend Index. SG Trend Index is an equally weighted basket of the 10 largest trend managers by AUM that are broadly diversified across markets, report net returns daily, and are open to new investment.

Exhibit 1 plots the rolling one-year excess return of SG Trend Index alongside the S&P 500 index. What stands out, and is widely recognized and valued by investors, is that there are several key periods in which SG Trend Index generated positive performance while the S&P 500 was down significantly. In fact, it's clear in the exhibit that during the three distinct weak periods for stocks since 2000, SG Trend Index was significantly positive. This underscores the power of trend-following strategies as a natural diversifier to equities.

Exhibit 1: Trend-following strategies have been a powerful diversifier to equities over time.

Rolling one-year excess return (%)



Source: Fidelity Investments, data from Bloomberg Finance LP, from 1/2000 (SG Trend Index inception) through 12/2025. **Past performance is no guarantee of future results.** Excess return is the return above the risk-free rate (three-month T-bill). See endnotes for index definitions.

The stand-alone performance of SG Trend Index since 2000, which is presented net of management and incentive fees, is weaker than stocks. However, SG Trend Index can still add value to an equity portfolio. Even with its lower return, as demonstrated in Exhibit 2, adding a 20% allocation to an equity portfolio modestly reduced historical return, but meaningfully reduced risk. That is an unusual outcome—typically diversifiers reduce risk but also meaningfully reduce return when their stand-alone return is low. But importantly, we would also note that trend adds value exactly when negative equity compounding is biting hardest. This is a key feature of crisis alpha.

Exhibit 2: Adding an allocation of SG Trend Index to the S&P 500 has meaningfully reduced risk, and provided a better risk-adjusted return.

	S&P 500	SG Trend Index	80% S&P 500, 20% SG Trend Index
Annualized excess return	7.0%	4.2%	6.2%
Annualized volatility	15.2%	13.4%	12.2%
Sharpe ratio	0.46	0.31	0.53

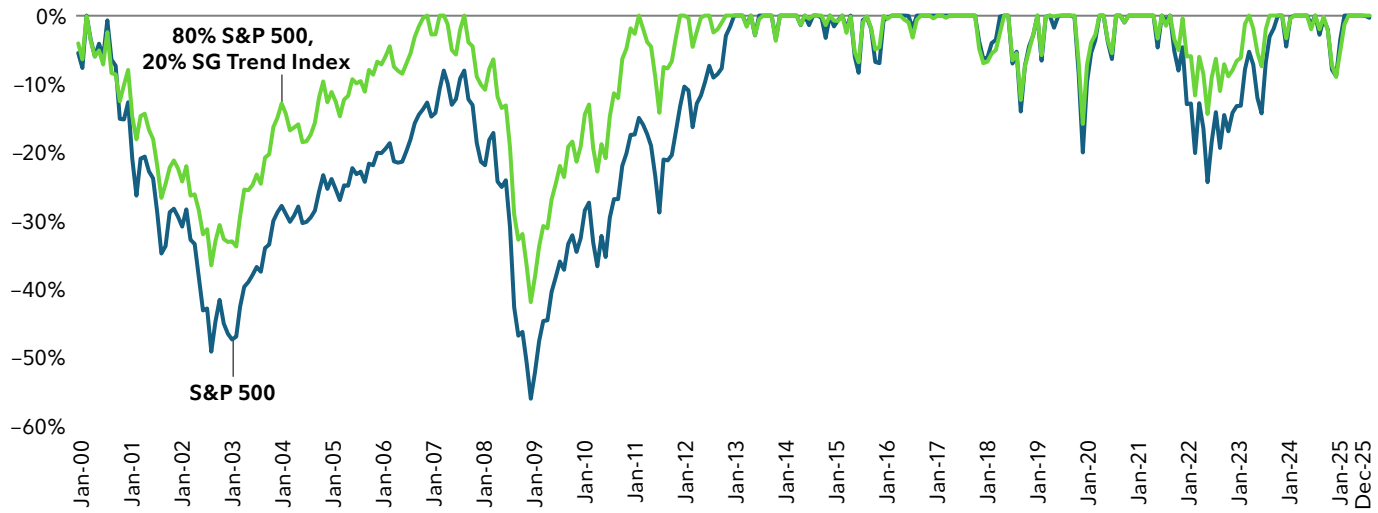
Source: Fidelity Investments, data from Bloomberg Finance LP, from December 2000 through December 2025. **Past performance is no guarantee of future results.** The 80%/20% portfolio represents 80% S&P 500 and 20% SG Trend Index and is for illustrative purposes only, to show return and volatility characteristics relative to the SG Trend Index and S&P 500. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions. Excess return is the return above the risk-free rate (three-month T-bill). Volatility is the annualized standard deviation of returns. See endnotes for index definitions.

Characteristics of crisis alpha are also visible in the average correlation of SG Trend Index to the S&P 500, –0.11, and conditional correlation when stocks are down, –0.31, during the same period (2000–2025).[2]

What about drawdowns? Exhibit 3 shows drawdowns of excess of cash returns of the 80% S&P 500/20% SG Trend and the S&P 500 Index over the past 25 years. It shows that equity drawdowns would have been meaningfully reduced by an allocation to SG Trend Index. What is not immediately obvious from the figure is how much of the reduction in drawdown comes from strong performance of trend-following versus how much comes from having less exposure to the asset class that is drawing down.

Exhibit 3: Adding SG Trend Index to an equity portfolio has reduced drawdowns.

Excess return (%)



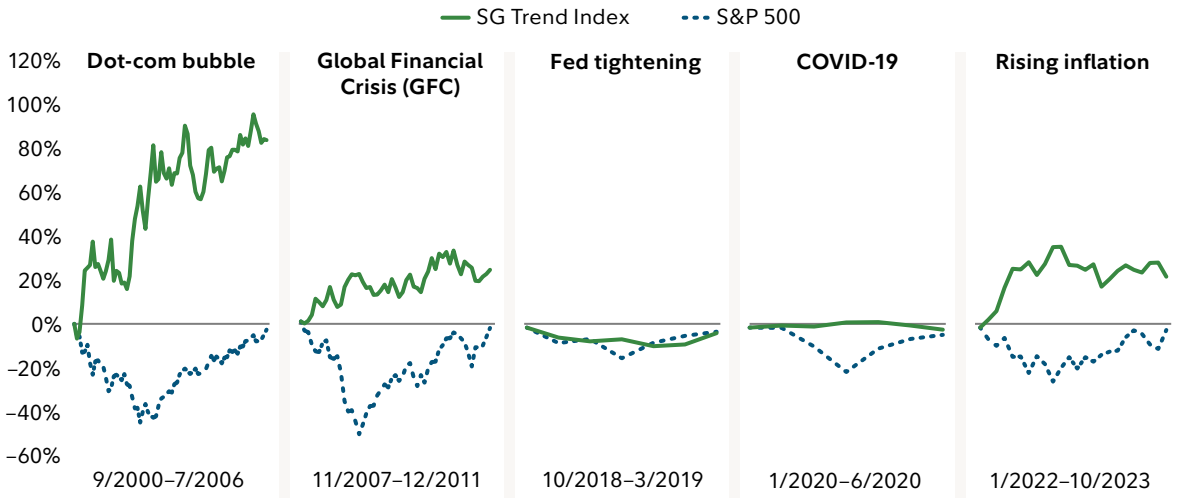
Source: Fidelity Investments, data from Bloomberg Finance LP. Data from January 2000 through December 2025. **Past performance is no guarantee of future results.** The 80%/20% portfolio represents 80% S&P 500 and 20% SG Trend Index and is for illustrative purposes only, to show return during drawdown periods relative to the S&P 500. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions. Excess return is the return above the risk-free rate (three-month T-bill). Volatility is the annualized standard deviation of returns. See endnotes for index definitions.

We can tease this out a bit further by specifically looking at the performance of trend strategies only during periods where equities are in drawdown. Exhibit 4 proves more selective and clarifies that trend was very additive in the S&P 500 drawdowns around 2000, 2007, and 2022. SG Trend Index did not contribute positively to return during the 2020 COVID-19 drawdown, nor during the smaller, shorter-lived corrections around 2018.

Should we be surprised by these periods where trend-following failed to add value during equity drawdowns? Notice that during the first several months of the equity drawdowns in 2000 and 2007, SG Trend Index also drew down modestly and only began adding value as equities continued downward. Keep in mind that trend strategies follow recent market momentum and are sometimes not positioned defensively early in a crisis. However, as dislocations broaden across asset classes, trend strategies can successfully reposition and have historically generated alpha during extended periods of market stress.

Exhibit 4: SG Trend Index outperformed during equity drawdowns, especially during prolonged periods of market distress and dislocations.

Cumulative performance in individual equity drawdowns



Source: Fidelity Investments, Bloomberg Finance LP, as of 12/31/25. Past performance is no guarantee of future results. Blue line represents S&P 500 drawdowns. Green line represents the SG Trend Index during those equity drawdowns, with performance reset after each drawdown. See endnotes for index definitions.

Based on the observations above, we will highlight the following key desirable characteristics of trend strategies:

1. Trend strategies can generate an attractive long-run return with a Sharpe ratio like that of traditional asset classes, meaning that allocators did not have to give up much in order to enjoy their long-run benefit.
2. While trend strategies may not always be positioned optimally at the onset of a crisis, they have generated strong performance during prolonged equity drawdowns. Trend strategies generally have had a meaningful negative (<–0.3) correlation to equities when equities are drawing down.

Part 2: Defining a simple trend model and long-only betas

A primary purpose of this paper is determining to what degree crisis alpha characteristics are driven by beta timing—or the timing and sizing of long or short exposure to broad asset classes—and to what degree they are a result of relative value decisions implied by trend

positioning within asset classes. To accomplish this, we build a simple trend-following strategy (Simple Trend Model) and a long-only, risk-targeted exposure to each asset class (long-only beta portfolios).

We then analyze day-by-day simulated return in order to calculate the trend strategy's exposure to each long-only portfolio on each day. Subtracting the long-only exposure from the trend weights gives us the relative value positioning within asset classes at each point in time. This full decomposition of weights allows us to simulate the performance of the beta-timing portion of trend separately from its relative value decisions.

To decompose trend-following returns into beta-timing and relative value decisions, we define two specific portfolios using the following construct:

1. Simple Trend Strategy: For simplicity, we use a single trend signal: the direction (+/–) of one-year return. For markets within each asset class, we measure one-year return each day and use it to determine the direction of a position in that market starting two days later, with the lag specified to allow for implementation delay. Position sizing is set inversely proportional to the market's recent historical risk.

Each asset class portfolio is resized every day such that its historical average realized volatility is 10%. This is different from scaling to a constant ex-ante volatility. Average historical volatility scaling gives us asset class trend sleeves that take more expected risk in periods where signals are more correlated than usual and less risk in periods where signals are less correlated.

Similarly, we scale the overall portfolio to have 10% average historical risk so that when our positions across asset classes are more correlated to each other than they have been on average historically, we take more risk. These dynamic mechanisms drive more variability in portfolio-level exposure to underlying asset classes and more variability in total risk than would be possible under a constant ex-ante risk portfolio construction.

2. Long-only beta portfolios (beta exposure): We define the long-only portfolio for each asset class as the positions that the trend strategy would hold if all signals were positive and the positions re-risked to have 10% ex-ante annualized volatility every day. This includes equity, bonds, short-term rates, commodities, and currency asset classes.

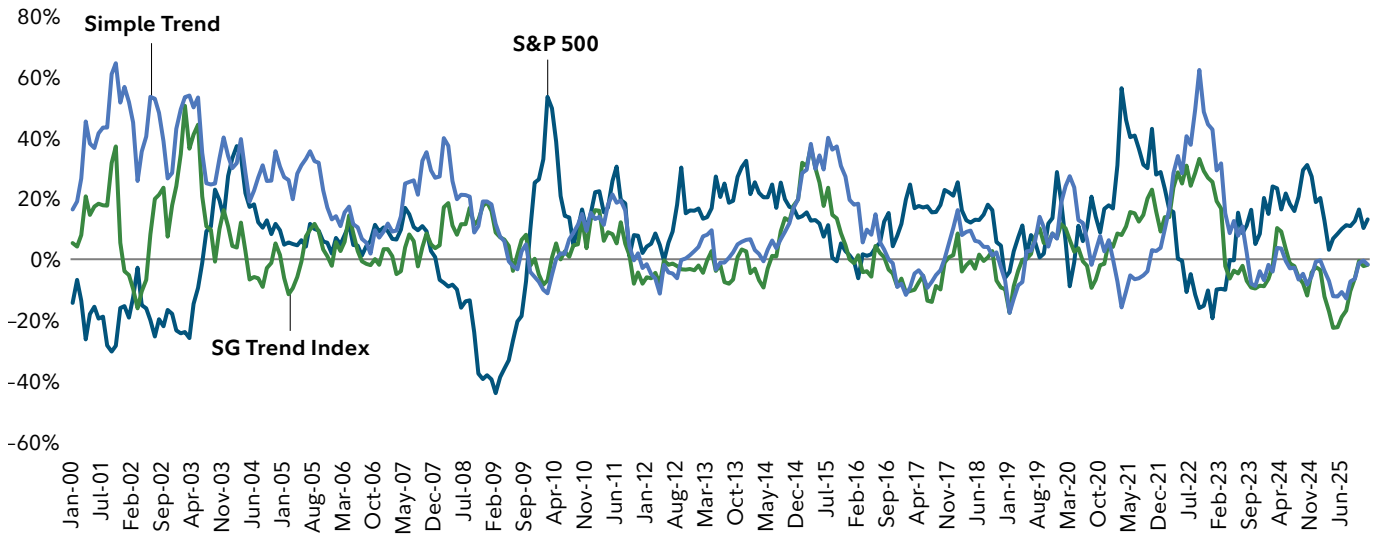
The risk model used for the Simple Trend Strategy and long-only beta portfolios combines two volatility estimates, one with a 3-month half-life estimated from daily data and another with a 12-month half-life. These volatilities are combined 50/50 and married to a rolling 2-year estimate of correlation taken from 3-day overlapped data.

Now that we have constructed our hypothetical Simple Trend Strategy, let's confirm that this portfolio generated crisis alpha characteristics historically. Keep in mind that SG Trend Index includes management and incentive fees, which were relatively high in the early 2000s and still remain higher in private structures (commingled and SMAs) compared with 40 Act structures in the public domain, which charge flat fees. SG Trend Index also includes trade costs borne by managers trading in these markets in real life. So, we should expect the Simple Trend Strategy simulation to have a large advantage. We are not claiming that the Simple Trend Strategy is superior—we are simply trying to create a laboratory where we can investigate whether defensiveness comes from the cross-sectional or time-series investments. Exhibit 5 plots rolling one-year excess performance of the Simple Trend Strategy portfolio alongside SG Trend and the S&P 500.

It shows that the Simple Trend Strategy generally produced large positive returns during periods where stocks did very poorly. The magnitude of the performance varies relative to SG Trend Index, but qualitatively we think the same pattern exists.

Exhibit 5: The Simple Trend Strategy performance shows defensive characteristics.

Rolling one-year excess return (%)



Source: Fidelity Investments, data from Bloomberg Finance LP, from January 2000 through December 2025. **Past performance is no guarantee of future results.** Rolling one-year performance of the SG Trend Index (green line), S&P 500 (dark blue line), and the Simple Trend portfolio (bright blue line). The Simple Trend Strategy defined on page 6. For illustrative purposes only to show a hypothetical Simple Trend Strategy relative to the SG Trend Index and the S&P 500. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions. Excess return is the return above the risk-free rate (three-month T-bill). See endnotes for index definitions.

What about the empirical measures of crisis alpha? In terms of adding value to an equity portfolio, we will have to further adjust the portfolio because the Simple Trend Strategy does not include any fees or transaction costs. The Sharpe ratio of the Simple Trend Strategy is 1.0 in the absence of these important features. Let's "penalize" the monthly returns of the Simple Trend Strategy to bring them down to the same annualized return as the SG Trend Index. When we do that, which is illustrated in Exhibit 6, we find that the results are qualitatively consistent with the results of the SG Trend Index. The arithmetic return of the 80/20 portfolio is still within striking distance of the stock-only portfolio, but with significantly lower risk and higher Sharpe ratio.

Exhibit 6: The Simple Trend Strategy demonstrates quantifiable crisis alpha characteristics.

	SG Trend Index	"Penalized" Simple Trend Strategy	S&P 500	80% S&P, 20% "Penalized" Simple Trend Strategy
Annualized excess return	4.2%	4.2%	7.0%	6.5%
Annualized volatility	13.4%	12.6%	15.2%	11.6%
Sharpe ratio	0.31	0.33	0.46	0.56

Source: Fidelity Investments, data from Bloomberg Finance LP. Data from January 2000 through December 2025. **Past performance is no guarantee of future results.** Excess return is the return above the risk-free rate (three-month T-bill). Volatility is the annualized standard deviation of returns. Simple Trend Strategy and "Penalized" Simple Strategy are defined above. The 80%/20% portfolio is 80% S&P 500 and 20% SG Trend Index, using the same "penalized" process. For illustrative purposes only to show a hypothetical Simple Trend Strategy, adjusted to reflect fees and transaction costs, relative to the SG Trend Index and the S&P 500. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions. See endnotes for index definitions.

From a correlation perspective, the penalized Simple Trend Strategy portfolio is even more defensive than the SG Trend Index, with a correlation to S&P 500 of –0.33 and with conditional correlation to equities in down months of –0.40 during the same time period (2000–2025).[3] From our perspective, the "Penalized" Simple Trend Strategy meets our criteria for "crisis alpha." For purposes of the rest of this analysis, we will use the Simple Trend Strategy without penalty.

To measure the dynamic exposure of a trend strategy to an asset class, we use long-only portfolios (defined on page 6). Because the ex-ante risk of the long-only asset-class portfolios will be 10% every day and the risk of the trend portfolio will vary through time (with the alignment of positions with the point-in-time correlation across markets and the point-in-time volatility of markets), the result should be that trend strategies take variable amounts of risk through time and that total portfolio loadings on the asset class portfolios vary significantly through time.

To get intuition for why we define the "market" portfolio in this way, first keep in mind that we will be risk-weighting positions in trend. So, if all trend signals are positive within an asset class, we will end up with only having beta-timing exposure to the asset class. This makes sense, because a Simple Trend Strategy portfolio like this one that is long everything is not making any relative value decions; all the risk is expressed in terms of exposure to the long-only portfolio.

Part 3: Decomposing the Simple Trend Strategy portfolio into beta-timing and relative value components

It is always the case that, given two portfolios holding the same instruments, an investor can express one portfolio (W_1) in terms of exposure (β) to the other portfolio (W_2) plus a set of residual positions (ϵ). We can express this relationship as follows:

$$W_1 = \beta * W_2 + \epsilon$$

Note that this relationship holds exactly because the definition of ϵ is simply $W_1 - \beta * W_2$.

Let's consider a simple example: suppose we are long markets 1 and 2 and short market 3, all within one asset class. This can be viewed as two distinct sets of positions. We have long exposure to the asset class that would be captured in β, and we also have long-short tilt exposure that will be captured in ϵ. Let's try to sort out how to decompose this portfolio:

For simplicity, let's assume all three markets have 10% ex-ante risk and we have one unit of exposure to each in the Simple Trend Strategy portfolio.

$$W_1 = [1,\ 1,\ -1]$$

Suppose further, for simplicity, the W2 portfolio is:

$$W_2 = [0.5\ ,0.5\ ,0.5]$$

Next, we figure out the W_1 portfolio's loading on W_2. This is a linear regression problem, and we find a level of β that minimizes the sum of the squared residuals.

$$\beta = \underset{\beta}{argmin} \sum (\beta W_2 - W_1)^2$$

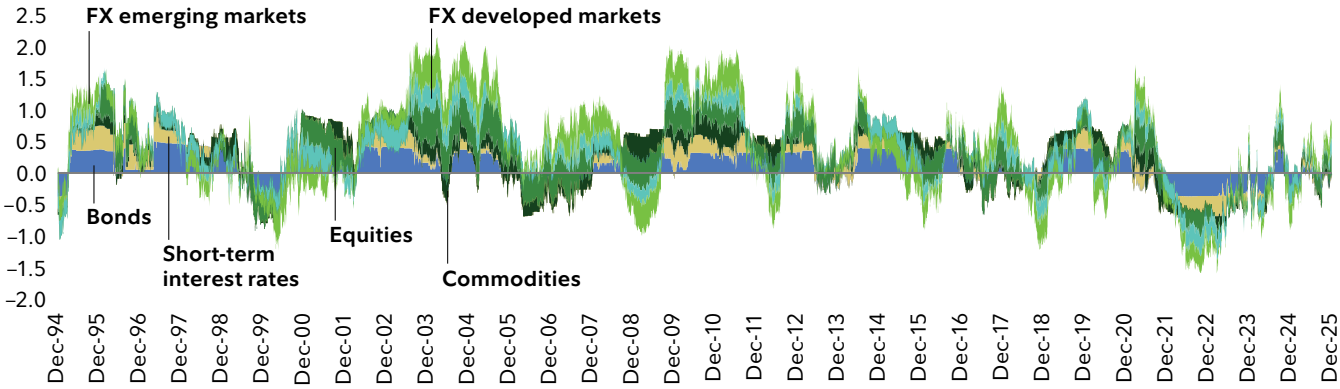
For the example W1 and W2 above, we find that $\beta = {}^2/_3$ and $\epsilon = [{}^2/_3, {}^2/_3, -{}^4/_3]$. As you can see, the residuals sum to zero. It is also the case that no value of beta would deliver a smaller residual sum of squares. And definitionally, $W_1 = \beta * W + \epsilon$ exactly. In practice we do everything in risk-weighted space (i.e., in units of expected risk) and our residuals, when multiplied by their respective market's expected volatility, sum to zero in each asset class. But the intuition is exactly like the simple example above.

We perform this decomposition by asset class on each day historically. We then calculate the performance of the idiosyncratic and beta components of strategy returns separately and study their relative contributions to trend strategy returns. The Simple Trend Strategy described above has a historical volatility of 12.6% since 2000. The volatility of the beta timing is 11%, the volatility of the relative value component is 3.5%, and diversification subtracts around 2% risk. In other words, 76% of the risk of the Simple Trend Strategy comes from beta timing.

The betas through time are shown in a stacked area chart in Exhibit 7. Keep in mind that the beta portfolios each have ex-ante risk of 10%, so a trend strategy with total beta exposure of 1.5 has exposures that would generate expected volatility of at least 15% in the absence of diversification. Exhibit 7 illustrates just how significant the beta-timing component of trend strategies can be.

Exhibit 7: The Simple Trend Strategy demonstrates significant exposure to long-only asset classes.

Simple Trend's beta exposure to respective asset classes

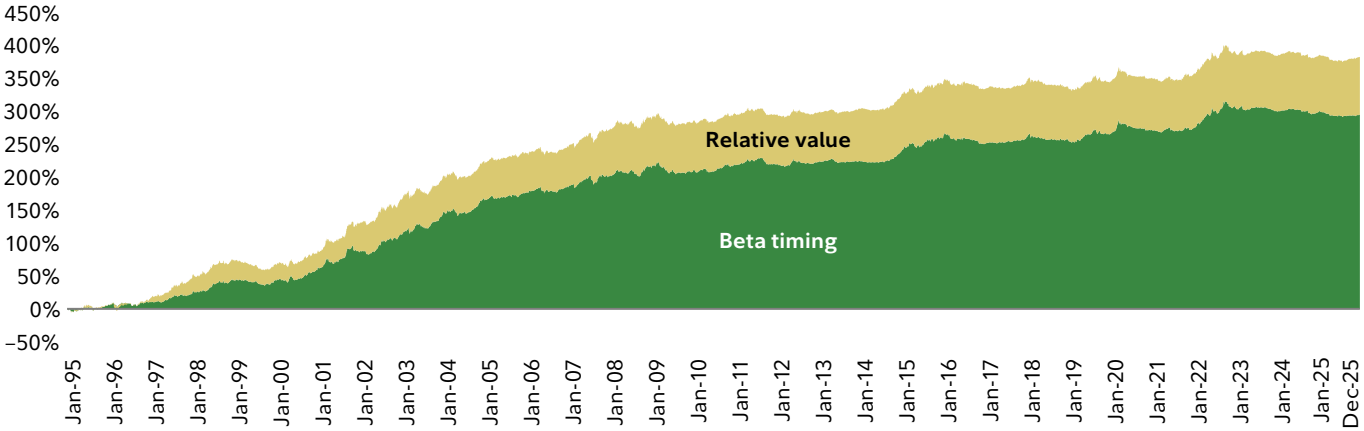


Source: Fidelity Investments. Daily data from Bloomberg Finance LP, from December 1994 through December 2025. **Past performance is no guarantee of future results.** Asset class portfolios defined on page 6. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions.

The cumulative contributions to return are even more one-sided than the relative risk-taking, as shown in Exhibit 8. Since 1995, the beta-timing component returned 9.7% per year, whereas the relative value component returned 2.8%. In other words, 78% of excess of cash return of the Simple Trend Strategy comes from beta timing.

Exhibit 8: Beta timing drives far more return than relative value.

Cumulative return % (excess of cash)



Source: Fidelity Investments. Daily data from Bloomberg Finance LP, from January 1995 through December 2025. **Past performance is no guarantee of future results.** For illustrative purposes only to show hypothetical beta-timing and relative value portfolios over time. Beta timing and relative value components were defined in Part 3 on page 9. The results are hypothetical in nature, have inherent limitations, do not reflect actual results, and given that market conditions may vary, are not guarantees of future results. There are many factors to consider when evaluating investment return assumptions.

From a crisis alpha perspective, beta-timing returns are more negatively correlated to stocks in every asset class except for FX. On a conditional basis, the same relationship holds. On average across asset classes, the correlation between stocks and trend components is more than twice as negative for the beta-timing portion of the portfolio than it is for the relative value positions, as seen in Exhibit 9. The conditional equity correlation of the beta-timing component of trend returns is also meaningfully more negative than the relative value component.

Exhibit 9: Beta-timing returns exhibit much more negative correlation to equity than relative value returns.

	Equity correlation		Conditional equity correlation	
	Beta timing	**Relative value**	**Beta timing**	**Relative value**
Bonds	–0.27	–0.02	–0.30	0.03
Short-term interest rates	–0.28	–0.02	–0.39	–0.12
Commodities	–0.07	–0.05	–0.16	0.09
Equities	–0.02	0.16	–0.34	0.11
FX developed markets	–0.16	–0.13	–0.18	–0.34
FX emerging markets	–0.12	–0.17	–0.10	–0.14
Total	**–0.27**	**–0.10**	**–0.42**	**–0.15**

Source: Fidelity Investments, data from Bloomberg Finance LP, from January 1995 through December 2025. **Past performance is no guarantee of future results**. See methodology in endnotes for asset class portfolios.

Because beta-timing decisions drive the bulk of the risk in trend strategies and because beta timing exposures drive conditional returns that are more negatively correlated to stocks, we can conclude that most of the defensiveness of trend strategies comes from their ability to time exposure to beta.

Part 4: What happens when we use other signals to inform the relative value portfolio?

Using our hypothetical Simple Trend Strategy example, we have shown that most of crisis alpha characteristics and most of the return of trend strategies come from beta timing, but that cross-sectional decisions make up 24% of the risk of a trend portfolio. What if, instead of making cross-sectional investments as a byproduct of trend investing, we instead carefully build a cross-sectional strategy that maintains proper market neutrality (equal volatility long and short, exactly like the residual we infer from the trend decomposition) and substitute it in for the trend-based cross-sectional decisions?

In this section, we will use an example to answer this question. We will build a hypothetical carry strategy (Carry) that trades equity index futures, commodity futures, bond futures, developed markets FX, emerging markets FX, and credit spreads—not the exact opportunity set from the Simple Trend Strategy, but 95% overlap—and carefully made beta neutral.

The carry signal is typical in most asset classes, with differences mainly in commodities. The sidebar on page 12 summarizes how the carry signal is constructed and tailored to each asset class.

The carry of each market is remeasured daily and compared to the market's risk. The portfolio construction within each asset class is simply Carry/vol minus average Carry/vol, and these values are applied to volatility matched return streams. The result is a portfolio that takes similar volatility in long and short positions (if the markets are collinear, the volatility of the long and short portfolio would be identical). We build an equally volatility weighted portfolio of the asset class sleeves and target the ex-ante risk of the portfolio to be 10%. We are not making any adjustments for trading costs in this analysis—but since we treat both the Simple Trend Strategy and Carry in exactly the same manner, all our conclusions are based on a comparison of one to the other, and the Simple Trend Strategy trades more actively than Carry, so we think the conclusions would hold up in a net-of-trade cost world too.

Exhibit 10 shows the Sharpe ratio, conditional (on equities down) Sharpe ratio, the correlation to equities, the conditional (on equities down) correlation to equities, and the marginal improvements in Sharpe and annualized return. The idiosyncratic relative value trend component produced a Sharpe ratio of 0.75, which is weaker than the 0.92 produced by the beta-timing component of the trend strategy. The combined trend strategy (Simple Trend Strategy), including both components, produced a Sharpe ratio of 1.02. Carry, on the other hand, generated a much higher Sharpe ratio of 1.68.

Asset class	Carry measure
Equity index futures	We assume that the current first out futures price will converge on the current spot index level, with the resulting appreciation or depreciation annualized into a carry measure.
Commodity futures	We use the level of realized carry over the past year, which we measure as the difference in return between the front month and third out of the Bloomberg Commodity Index's single-commodity index for each commodity over the past year.
Bond futures	We assume that the current rate moves to the rate that is one point closer on the yield curve over the coming period; for example, we assume the current 10-year rate will drop to the current 7-year rate over the coming three years, leading to a capital gain or loss in the value of the bond, which we then annualize. We also assume we earn the current rate as the coupon and that we finance the position at the current LIBOR-equivalent rate.
Credit spreads	We assume that we earn the current spread on each instrument.
Developed and emerging markets FX	We assume that we open positions at the current forward rate and close them at the current spot rate, leading to a capital gain or loss. In developed FX markets, we swap out the carry signal and instead use a mean reversion signal to highlight the flexibility of the approach.

Exhibit 10: Trend strategies can be enhanced without polluting their defensive qualities.

	Sharpe ratio	Conditional Sharpe ratio	Equity correlation	Conditional equity correlation	Marginal Sharpe ratio (90% equity)	Marginal return (90% equity)
S&P excess	0.58	–	–	–	–	–
Beta-timing trend	0.92	1.33	–0.27	–0.42	0.08	0.10%
Relative value trend	0.75	0.99	–0.10	–0.15	0.02	–0.59%
Simple trend	1.02	1.44	–.26	–0.41	0.11	0.38%
Carry	1.68	1.18	0.14	0.13	0.12	0.86%
95% Simple Trend+20% Carry	1.31	1.62	–0.24	–0.39	0.12	0.67%
100% Beta-Timing Trend+40% Carry	1.49	1.65	–0.20	–0.35	0.13	0.79%

Source: Fidelity Investments, Bloomberg Finance LP. Portfolios defined in paper. Data from January 1995 through December 2025. Marginal Sharpe and annualized return to an equity portfolio of 90% S&P 500 and 10% each to the strategies shown in rows 2-7. Excess return is the return above the risk-free rate (Three Month T-Bill). **Past performance is no guarantee of future results**.

How should we think about incorporating carry into a trend portfolio? Should we simply scale down exposure to the Simple Trend Strategy and add in Carry until we get back up to the original volatility of the Simple Trend Strategy?

We can start by reducing the exposure to Simple Trend Strategy by 5% and adding 20% Carry, without any impact on the overall risk of the portfolio. As shown in Exhibit 10, the 95% Simple Trend+20% Carry shows improvement in the Sharpe ratio compared with Simple Trend Strategy, while offering similar correlation benefits. As displayed in the last two columns of the table, when reallocating capital from a 100% equity portfolio to a 90% equity portfolio and 10% exposure to this blend of Simple Trend and Carry, the Sharpe ratio increases by 0.12 and return rises by 0.67% per year on average historically. Adding Simple Trend Strategy without the Carry component to equity only increases returns by 0.38% per year. So it seems that this can be one feasible solution for incorporating carry into a trend portfolio.

If you want trend-following crisis alpha but also want a strategy with higher average return—particularly in markets where equities are thriving—the analysis in this paper suggests it's possible to have both.

What if we want more carry than this without taking more risk at the strategy level? A second option would be to remove the idiosyncratic component of Simple Trend Strategy and replace its risk budget in full with Carry. It turns out that this requires a 40% allocation to Carry and a full allocation to the beta-timing component of Simple Trend Strategy (100% Beta-Timing Trend+40% Carry, as shown in Exhibit 10). This combination has an even higher Sharpe ratio of 1.49, as compared with 1.31 for 95% Simple Trend+20% Carry and 1.02 for Simple Trend Strategy. As compared with the Simple Trend Strategy, the conditional Sharpe ratio rises to 1.65 from 1.44, and the correlation to equities remains very low at –0.20. The conditional correlation to stocks also does not observe much change.

What's fascinating is that the conditional Sharpe ratios of both carry-augmented strategies are higher than that of the Simple Trend Strategy or either of its subcomponents. We believe this demonstrates that investors can enhance trend strategies without polluting their defensive qualities by *carefully tailoring a set of cross-sectional active decisions to be beta neutral in practice.*

So why not just do all carry and dispense with trend entirely? We think there are several reasons: the conditional equity correlation and Sharpe ratio of carry are inferior to those of a combined trend and carry portfolio. At the same time, adding carry significantly enhances a trend strategy, raising it into the same Sharpe ratio range as carry alone. Third, when considered as a partial allocation to all-equity exposure, the combined portfolio adds almost exactly as much as carry to the Sharpe ratio and average return, but with superior strategy diversification too. Strategy diversification without eroding return is very attractive, and what we see in this section is that strategy diversification need not erode the primary characteristics of a trend strategy.

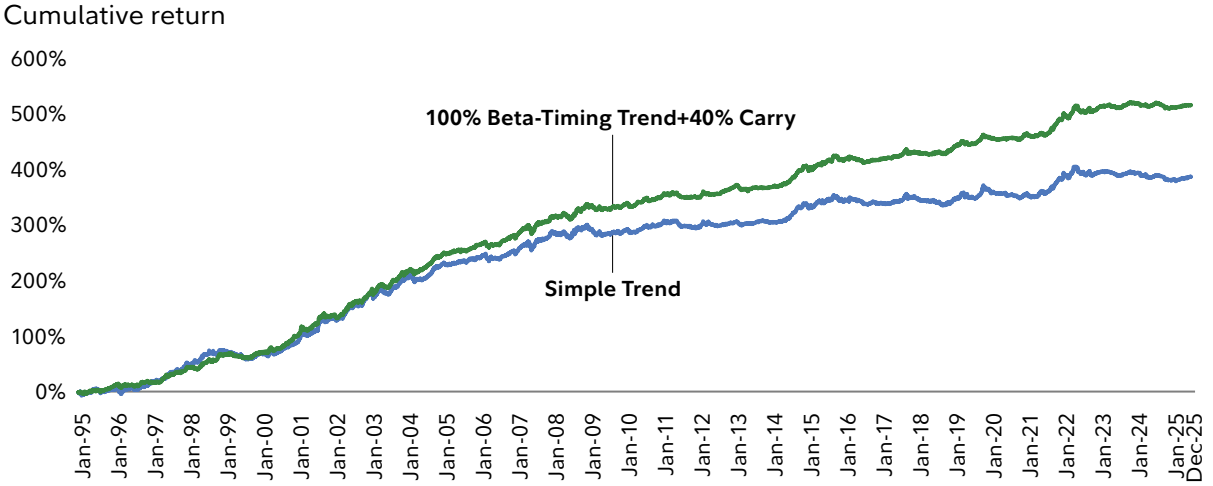
Conclusion

We started this paper by describing the crisis alpha characteristics of trend-following strategies. Using these as a simple motivation, we then built a toy hypothetical trend model where we had full transparency into holdings. We used these holdings to fully decompose the trend strategy into two separate strategies: beta timing and market-neutral trend-based relative value. Then we tried to determine whether the crisis alpha characteristics of trend following were driven by beta timing or relative value trades.

Perhaps most importantly, 76% of the risk of the trend portfolio was driven by beta timing, so trend is mostly a beta-timing strategy. The beta-timing component has a higher Sharpe ratio than the relative value component, has larger negative downside correlation with equities, and higher conditional Sharpe ratio when stocks fall. So, most of the risk of a trend strategy is beta-timing, and the beta-timing component is a better source of crisis alpha.

Lastly, we considered whether it would be possible to maintain the crisis alpha characteristics of the trend strategy while combining it with other sources of relative value investment strategies. Of note, as illustrated in Exhibit 11, was that we could completely replace the trend strategy's allocation to trend-based relative value with a significant allocation to another, higher Sharpe ratio relative value strategy, and keep most of the crisis alpha benefits of the strategy. That is the key finding of this paper. If you want trend-following crisis alpha but also want a strategy with higher average return—particularly in markets where equities are thriving—the analysis in this paper suggests it's possible to have both. So long as your relative value investments do not materially alter the overall beta profile of the portfolio, the crisis alpha is preserved.

Exhibit 11: Adding carry to trend can preserve crisis alpha while enhancing overall strategy quality.



Source: Fidelity Investments. Daily data from Bloomberg Finance LP, January 1995 to December 2025. Simple Trend Strategy, and 100% Beta Timing+40% Carry described on page 12. **Past performance is no guarantee of future results**.

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Methodology for beta portfolios outlined in Exhibit 9

To construct asset class beta portfolios, we selected most liquid futures markets within each asset class that are commonly traded by CTA managers. For the equity beta portfolio, the universe includes 28 global equity futures contracts. We used all available return data for each contract, ranging from 1995 through 2009, with average for the asset class being 26.1 years of data. For the currency beta portfolio, the universe includes 25 developed and emerging markets currency contracts. We used all available return data for each contract, ranging from 1995 through 2006, with average for the asset class being 28.5 years of data. For the short-term interest rate (STIR) beta portfolio, the universe includes 17 STIR contracts. We used all available return data for each contract, ranging from 1995 through 2010, with average for the asset class being 28.5 years of data. For the bond beta portfolio, the universe includes 19 global bond contracts. We used all available return data for each contract, ranging from 1995 through 2012, with average for the asset class being 26.7 years of data. For the commodity beta portfolio, the universe includes 30 commodity contracts including energy, agriculture and metals. We used all available return data for each contract, ranging from 1995 through 2006, with average for the asset class being 30.4 years of data. For each asset class, based on daily data, we constructed portfolios comprising the positions that the trend strategy would hold if all signals were positive in each market. Finally, we re-risked the positions to have 10% ex-ante annualized volatility every day.

Futures markets for the asset classes: Equities: S&P 500 E-Mini Futures; DAX Index Futures; FTSE 100 Index Futures; CAC 40 Index Futures; IBEX 35 Index Futures; Hang Seng Index Futures; Nikkei 225 mini Futures JPX; Topix Futures; KOSPI200 Futures; FTSE/JSE Top 40 Futures; EURO STOXX 50 Index Futures; MSCI Taiwan Index Futures SGX; Swiss Market Index Futures; MSCI Singapore Index Futures SGX; NASDAQ 100 E-Mini Futures; S&P Canada 60 Futures; ASX SPI 200 Index Futures; IFSC Nifty 50 Index Futures SGX; S&P MidCap 400 Futures; Russell

2000 eMini ICE/CME; Dow Jones ($5) E-mini Futures; H-Shares Hang Seng China Enterprises; FTSE MIB Index Futures; OMX Stockholm 30 Futures; SET50 Futures; FTSE China A50 Futures SGX; MSCI EAFE Futures; MSCI Emerging Markets Mini Futures. Developed market FX: AUD/USD; USD/CAD; USD/CHF;GBP/USD; USD/JPY; USD/NOK; NZD/USD; USD/SEK; EUR/USD. Emerging market FX: USD/SGD; USD/ZAR; USD/CZK; USD/CLP; USD/MXN; USD/HUF; USD/ILS; USD/PLN; USD/BRL; USD/TWD; USD/INR; USD/PHP; USD/KRW; USD/COP; USD/IDR; USD/CNH. Short-term interest rates: 3 Month SOFR Futures F1 (former Eurodollar ED); 3 Month SOFR Futures F1 (former Eurodollar ED); 3 Month SOFR Futures F1 (former Eurodollar ED); 3 Month SOFR Futures F1 (former Eurodollar ED); 3 Month Sonia Futures F1 (former Sterling L A); 3 Month Sonia Futures F1 (former Sterling L A); 3 Month Sonia Futures F1 (former Sterling L A); 3 Month Sonia Futures F1 (former Sterling L A) 3 Month Canadian Bankers' Acceptance Futures; 3 Month Canadian Bankers' Acceptance Futures; 3 Month Canadian Bankers' Acceptance Futures; 3 Month Canadian Bankers' Acceptance Futures; 3 Month Australian Accepted Bills Futures; 3 Month Euribor Futures F1; 3 Month Euribor Futures F1; 3 Month Euribor Futures F1; 3 Month Euribor Futures F1. Bonds: 3yr Australian Gov. Bond Futures; 10yr Australian Gov. Bond Futures; 10yr Canadian Gov. Bond Futures; Euro-Bobl 5-Year Futures; Euro-Bund 10-Year Futures; Long Gilt Futures; US 2-Year T-Note Futures; US 5-Year T-Note Futures; US 10-Year T-Note Futures; US 30-Year T-Bond Futures; Euro-Schatz 2-Year Futures; Euro-Buxl 30-Year Futures; Japanese 10-Year Bond Futures JPX; Korean 3-Year Government Bond Futures; CBOE Volatility Index (VIX) Futures; MS Euro-BTP Futures; US Ultra Treasury Bond Futures; Korean 10-Year Government Bond Futures; Euro-OAT Futures. Commodities: Soybean Futures; Corn Futures; Corn Futures; Live Cattle Futures; Wheat Futures CBOT; Kansas Wheat Futures; Lean Hogs Futures; Coffee C Futures; Sugar #11 Futures; Soybean Oil Futures; Cotton #2 Futures; Cocoa Futures; Light Crude Oil Futures NYMEX; Light Crude Oil Futures NYMEX; Brent Crude Oil Futures ICE; Heating Oil #2 Futures NYMEX; Natural Gas Futures NYMEX; Natural Gas Futures NYMEX; Gasoil Futures ICE; Copper High Grade Futures COMEX; Gold Futures COMEX; Silver Futures COMEX; Platinum Futures NYMEX; Soybean Meal Futures; Aluminium Futures LME; Zinc Futures LME; Nickel Futures LME; Lead Futures LME; Palladium Futures NYMEX; RBOB Gasoline Futures NYMEX.

Endnotes

1. See "Trend Following with Managed Futures: The Search for Crisis Alpha," by Alex Greyserman and Kathryn Kaminski, Wiley, 8/1/14.

2. Source: Bloomberg Finance LP, Fidelity Investments, 12/31/25.

3. Source: Bloomberg Finance LP, Fidelity Investments, 12/31/25.

Index definitions

S&P 500® index is a market capitalization-weighted index of 500 common stocks chosen for market size, liquidity, and industry group representation to represent U.S. equity performance.

Bloomberg U.S. Aggregate Total Return Index measures the performance of investment-grade, U.S. dollar-denominated, fixed rate taxable bonds. It includes a broad range of bonds, including government, corporate, mortgage-backed and asset backed securities. It reflects total return, including the reinvestments of all income payments, such as coupon payments and capital gains or losses, back into the index.

The SG Trend Index is designed to track the 10 largest trend following CTAs and be representative of the trend followers in the managed futures space. The SG Trend Index is equally weighted, and rebalanced and reconstituted annually.

Bloomberg Commodity Index Total Return is composed of futures contracts and reflects the returns on a fully collateralized investment in the BCOM. This combines the returns of the BCOM with the returns on cash collateral invested in 13-week (3 Month) U.S. Treasury Bills.

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