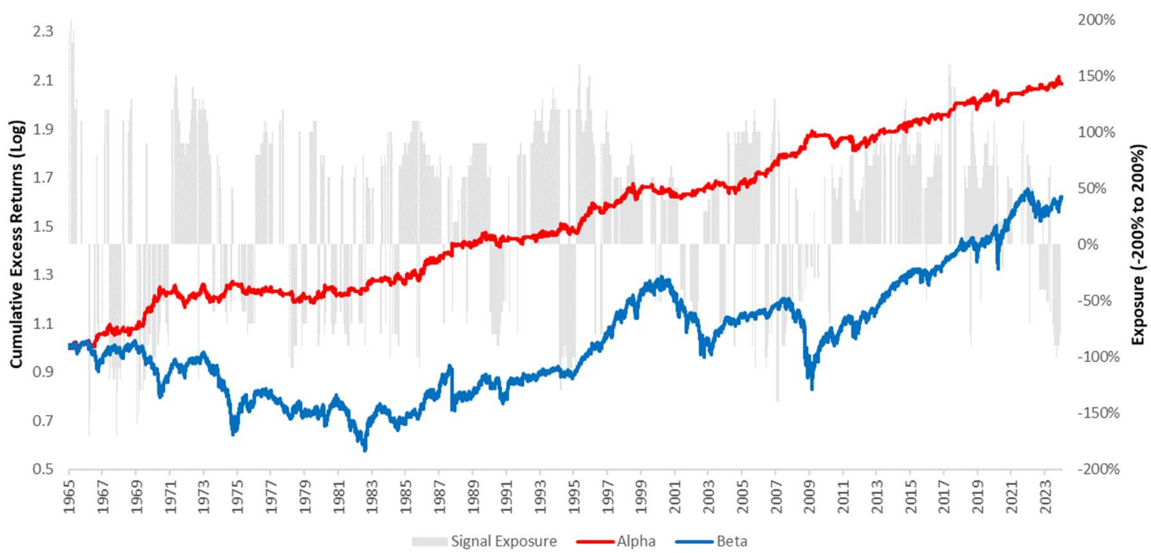
Prometheus Alpha Strategies: US Equities (S&P 500)

At Prometheus, innovation has been the cornerstone of our evolution, and we're constantly pushing forward our understanding of macroeconomic dynamics to further our edge in markets. A key driver of this evolution is our iterative research process, where we try to systematize our ongoing understanding of macro conditions into investment strategies. Keeping with this process over the last year has allowed us to improve our process substantially and create our next generation of programs: Alpha Strategies.

Alpha Strategies reflects the best parts of our understanding of macro, markets, and portfolio construction. The purpose of Alpha Strategies is simple: to provide durable and consistent return streams independent of beta. These strategies will span equities, fixed income, and commodities, which will be released individually over the next few months. Eventually, we will combine these into a single strategy, which will be accessible to subscribers in a similar format to our ETF Portfolio. Today, we kick things off with our Alpha Strategy for the S&P 500. We begin with the high-level performance statistics:

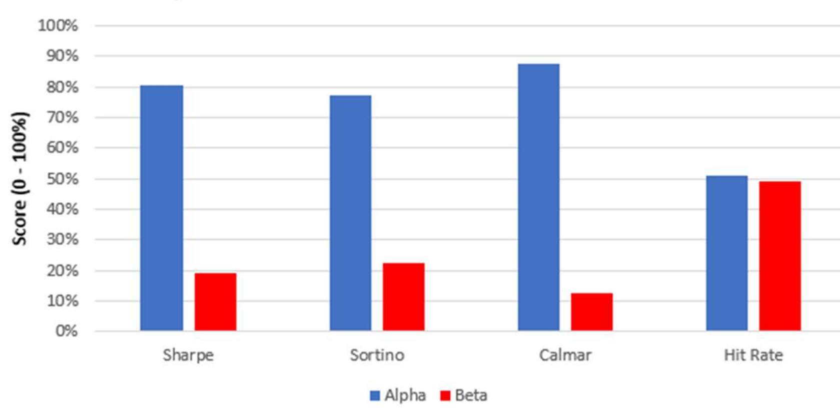
Alpha Strategies: US Equities (S&P 500), Long/Short Alpha



Summary Statistics

	Alpha	Beta
Total Return	9.0%	7.0%
Excess Return	4.8%	2.4%
Volatility	7.9%	16.7%
Semi-Variance	7.5%	13.0%
Max DD	-16%	-57%
Sharpe	0.61	0.15
Sortino	0.64	0.19
Calmar	0.29	0.04
Hit Rate	52%	50%
DD Duration (Years)	3.85	7.07

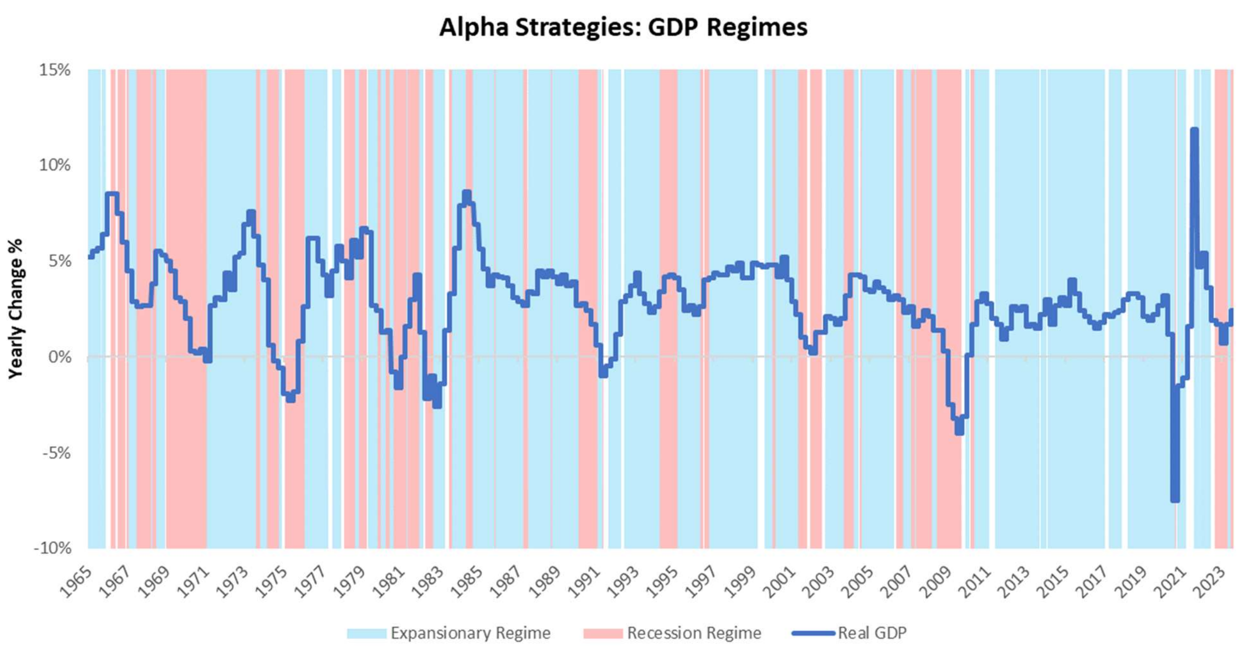
Risk-Adjusted Returns: Relative Performance Visualization



As we can see, our Alpha Strategy has largely outperformed beta exposure in terms of providing a smooth return path over time, as evidenced by the cumulative excess return path. Furthermore, the Alpha Strategy outperforms beta exposure across measures of risk-adjusted returns, with higher returns and lower risk across measures. While the outperformance of this strategy is evident from these statistics, we think it is important to recognize that the objective of alpha is not to outperform beta but rather to add value to beta in an uncorrelated fashion.

Thus, while we display our Alpha Strategy relative to its underlying beta, outperforming this beta is not an explicit objective but a welcome outcome. Alpha is always scarce in markets, and adding alpha to any return stream is additive to the portfolio. Our approach seeks to generate macro alpha, i.e., alpha that stems from correctly identifying future economic conditions relative to what markets have currently priced.

In the case of US Equities, this requires having a view of the business cycle. The single most significant driver of equity market returns over long periods is the level and change of real GDP growth. Using a vast array of economic data, we can estimate expected regimes for the economy. We visualize this high-level regime recognition below:

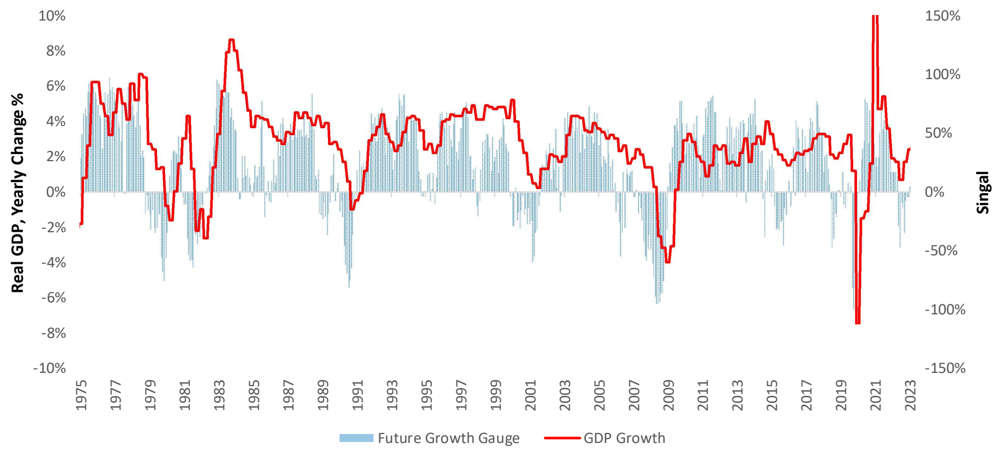


As shown above, our systematic regime recognition process has generally proven adept in spotting turning points and cascades in GDP regimes. This regime recognition stems from our comprehensive tracking of macroeconomic conditions, detailed in the thousands of pages of research we have shared in our *Month In Macro* and *The Observatory*. While we do not share the specifics of our signal construction to protect our edge in markets, we will continue to share the intuitions and frameworks driving our systematic assessment of future economic conditions.

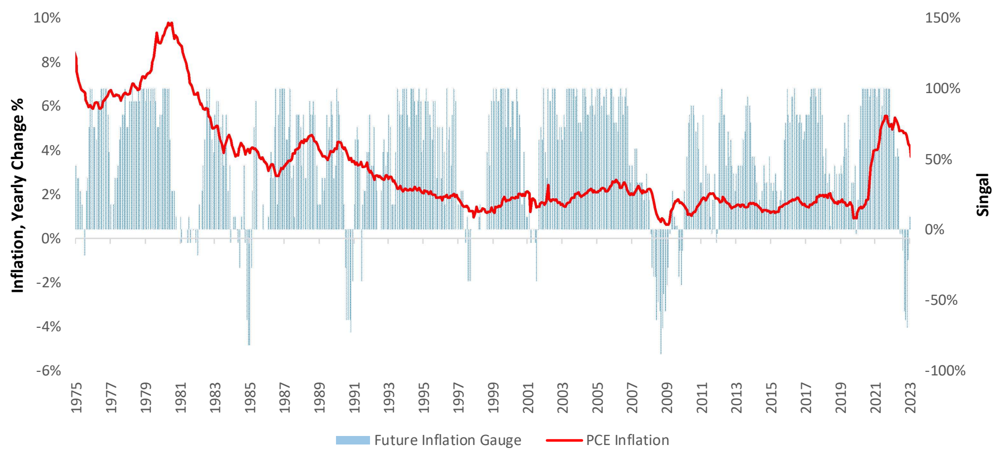
Below, we show some of the high-level factors that drive our systems' assessment of where we are in the economic cycle:

Prometheus Macro Signals: Systematic Fundamental Outlook

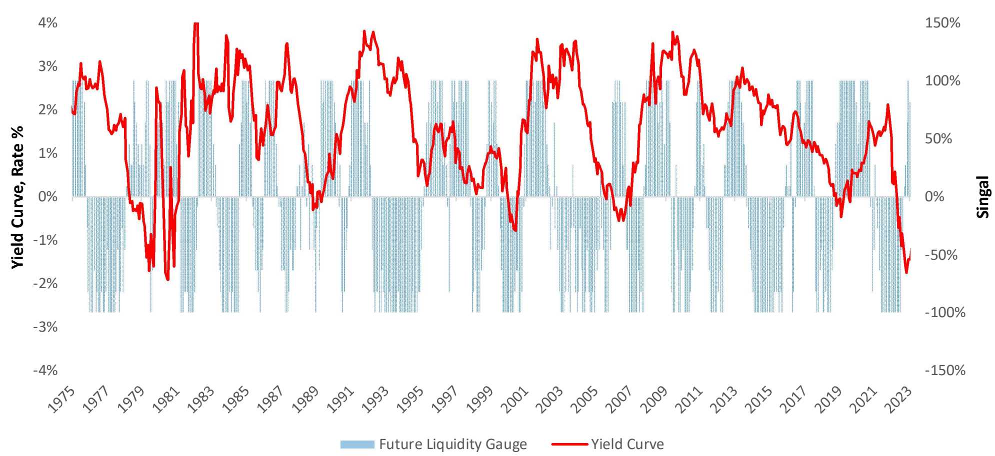
Prometheus Macro Signals: Growth



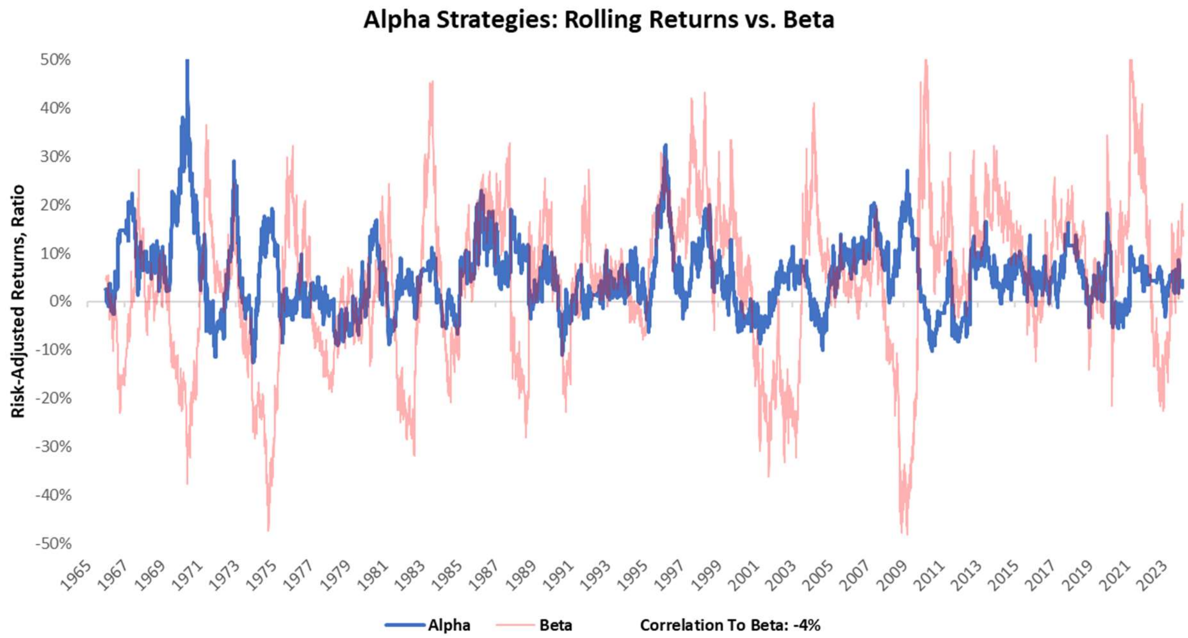
Prometheus Macro Signals: Inflation



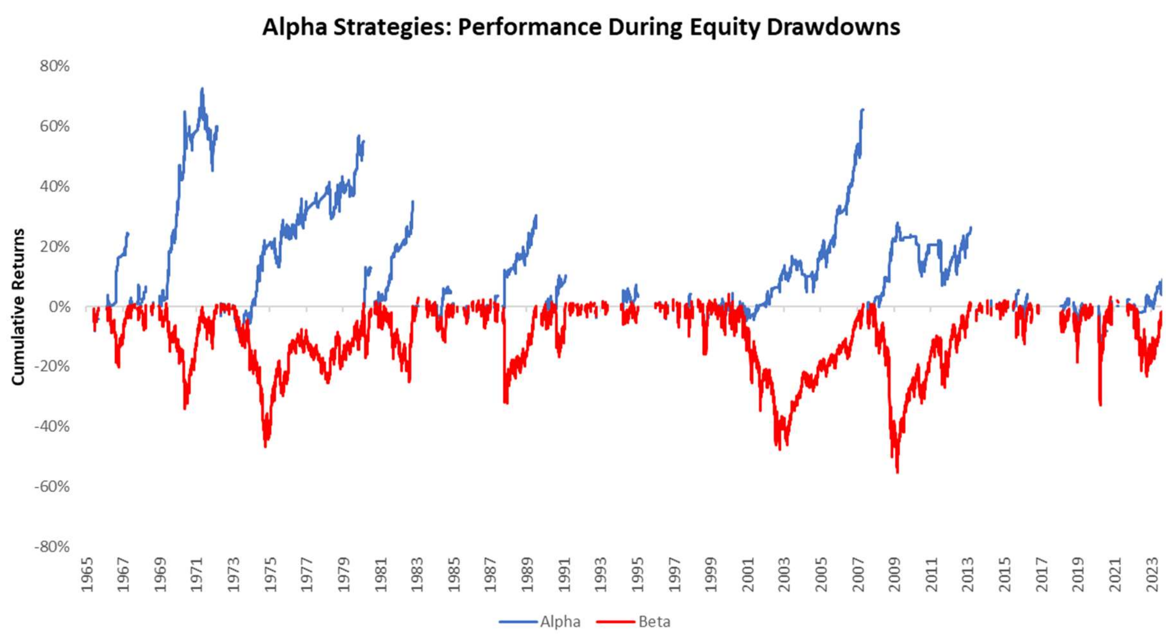
Prometheus Macro Signals: Liquidity



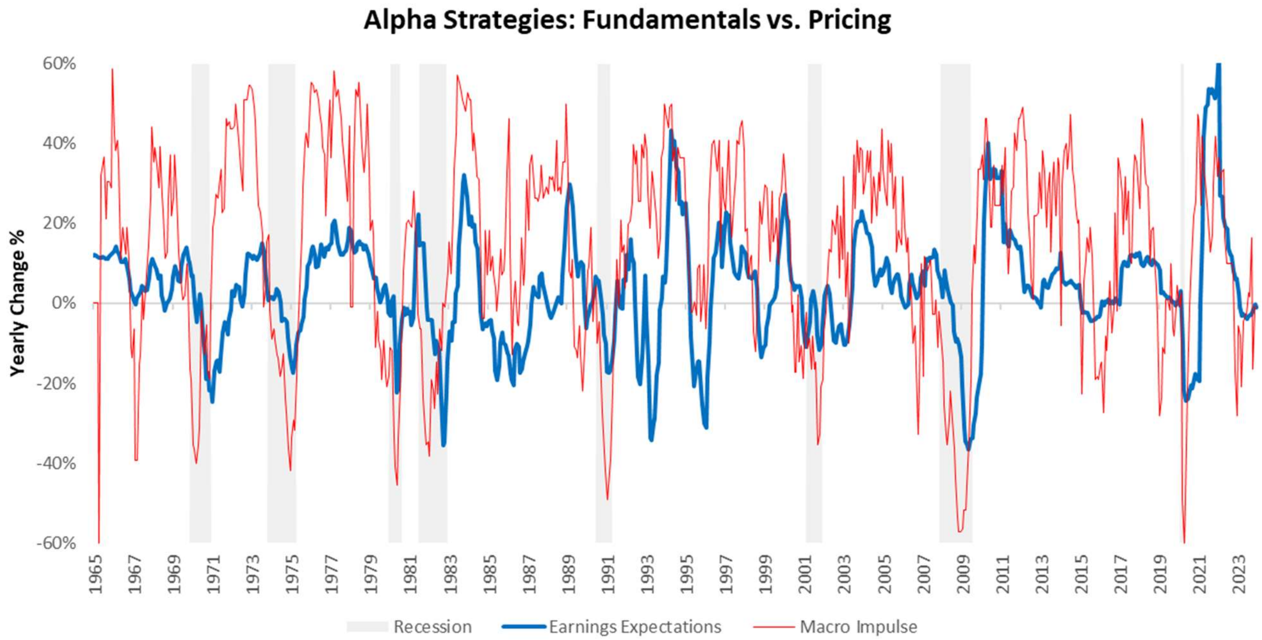
This broad-based assessment of macro conditions allows our strategies to be wary of macroeconomic risks to equities, creating the potential for us to profit from declines in equity prices that markets may not have priced in. Conversely, when asset prices are weak, but fundamentals point to a strong environment ahead, our strategies can find significant value in being long equities. The strategy will likely run limited exposure during periods where mispricings are limited.



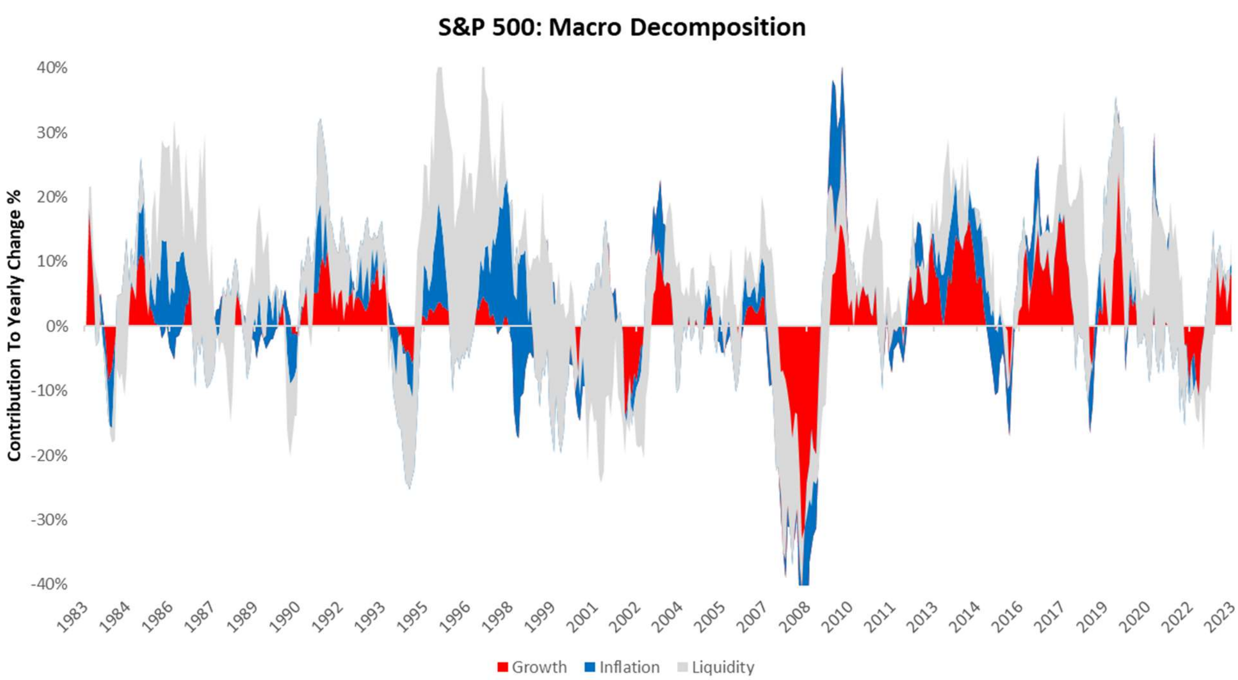
As shown above, our systems avoid large drawdowns in equities while participating in rebounds. We visualize the outperformance during beta drawdowns below, where we visualize cumulative strategy performance during beta drawdowns of greater than 5%:



As we can see above, our Alpha Strategy recognizes potential downside risk in equity markets and seeks to preserve and potentially even compound capital during these downturns. An essential part of this process is understanding not just the potential path of the economy but how probable that is relative to what is priced in by asset markets. We do this by assessing both fundamental dynamics:

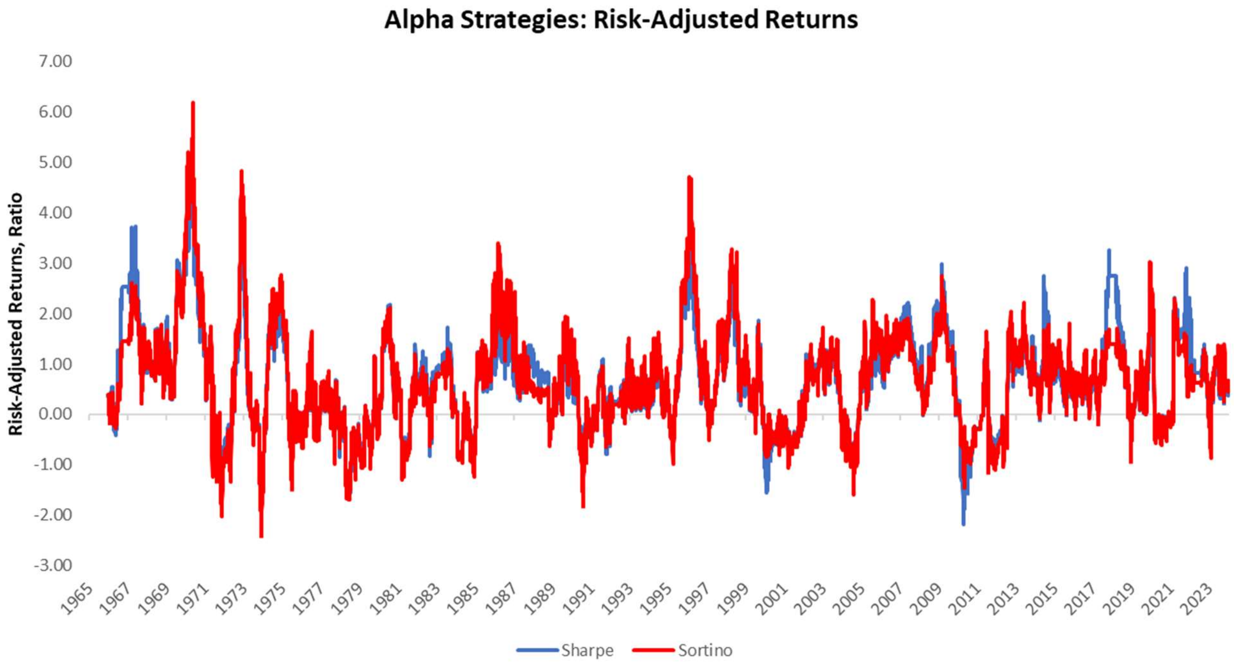


And market-implied pricing of conditions:

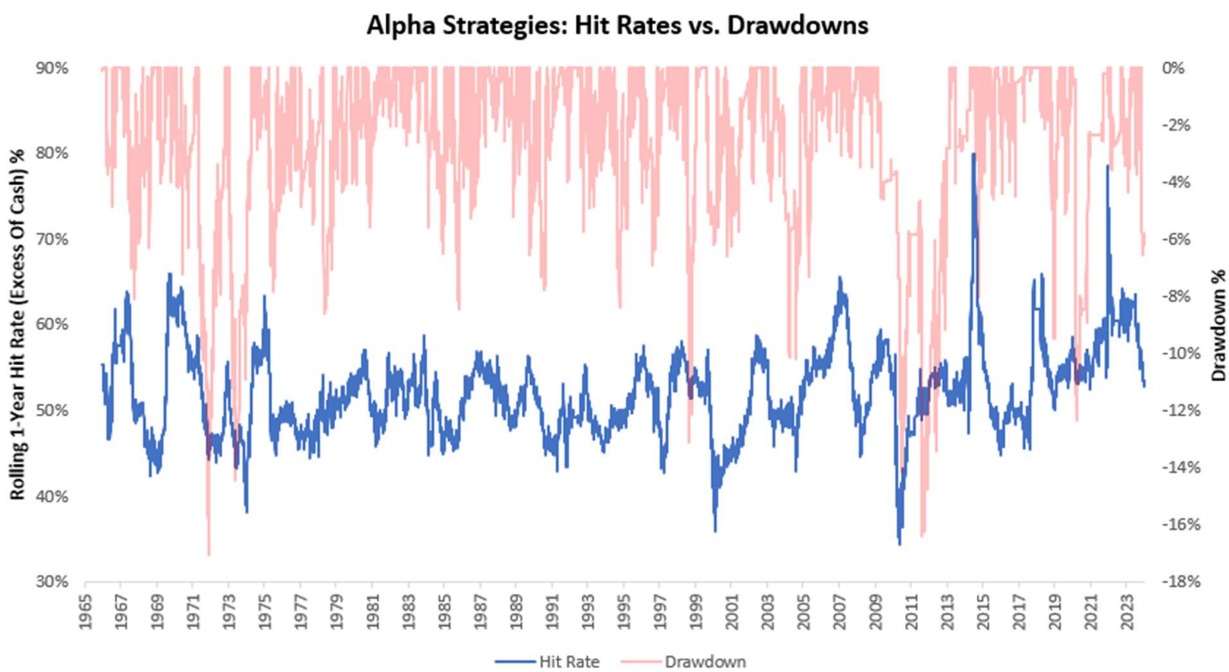


Combining a very modest edge in assessing forward-looking macro conditions and an assessment of market pricing of those allows us to take on bets that offer a better risk-reward profile.

We see this in our assessment of rolling risk-adjusted returns, with rolling Sharpe (0.61) and Sortino (0.64) ratios in positive territory on average, with positive skew:

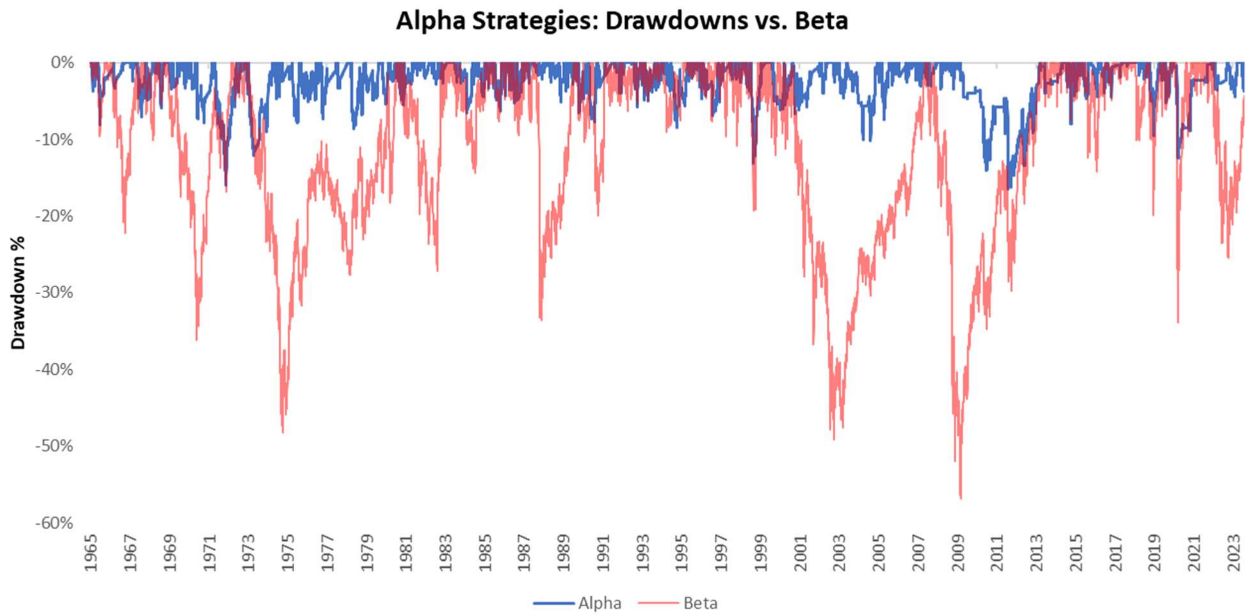


These positive risk-adjusted returns come as a function of a modest edge in hit rates, with an average daily hit rate of 52%:

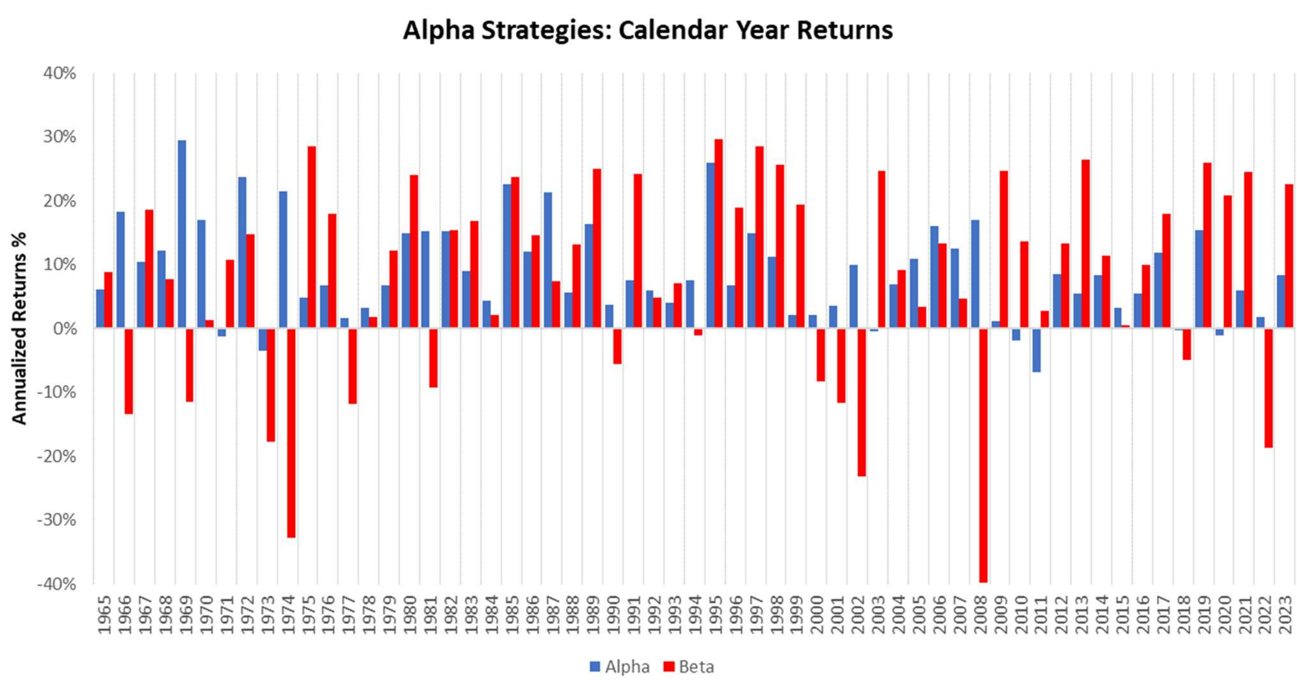


Now, while a daily hit rate of 52% represents a modest edge, the cumulative effect of this edge over long periods with a modest skew can contribute to significant cumulative return impacts. Creating the conditions for this compounding to occur requires a considerable focus on drawdown control.

Below, we show the drawdowns for our Alpha Strategy versus Beta:



As shown above, our Alpha Strategies has shown limited drawdowns over our simulation history, with a maximum drawdown of 16%. Importantly, our strategy has maintained this limited drawdown profile despite facing hit rates as low as 30% (i.e., 70% offside trades in a year). This drawdown profile has allowed our simulated strategy to show strong calendar year performance, with only six down years since 1965:



Below, we offer the calendar mean returns by month for those wishing for some more texture:

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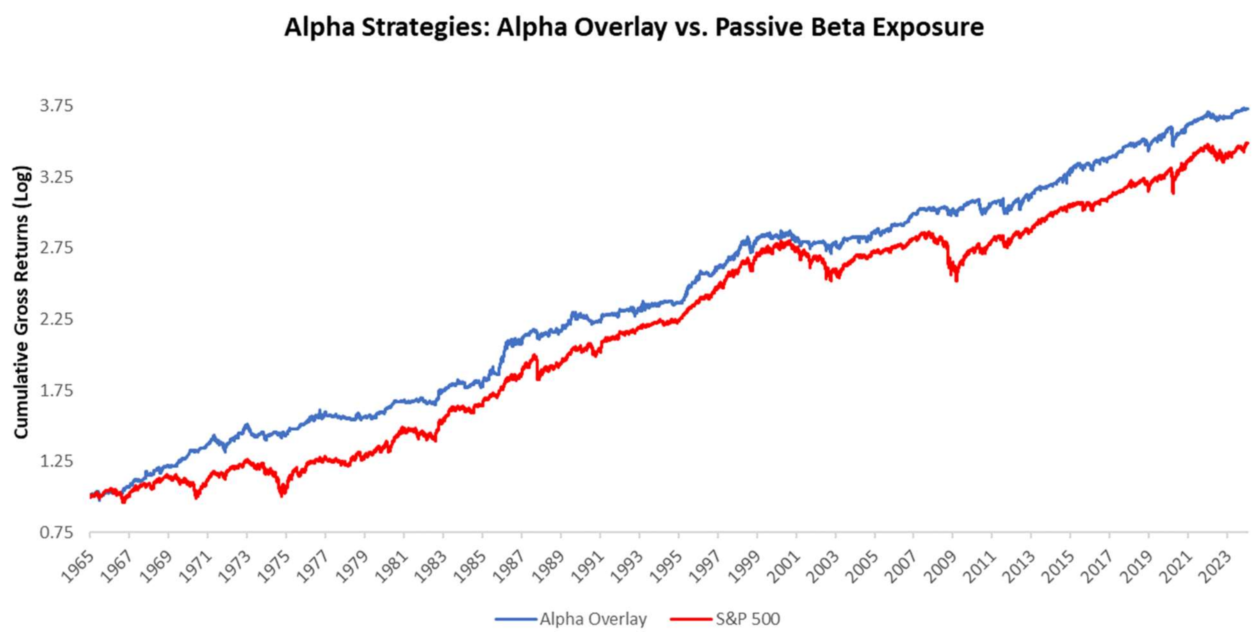
Alpha Strategies: Calendar Returns, By Month (1965-2023)

	January	February	March	April	May	June	July	August	September	October	November	December
1965	3.0%	0.8%	-2.5%	5.1%	0.7%	-4.6%	0.6%	0.2%	1.8%	0.3%	0.3%	0.3%
1966	0.3%	0.3%	0.9%	0.6%	0.3%	0.3%	0.4%	8.8%	3.3%	0.4%	0.4%	0.3%
1967	0.4%	-0.1%	4.5%	0.3%	1.9%	-1.2%	-3.7%	2.5%	-0.2%	5.0%	0.9%	-1.4%
1968	2.8%	0.3%	3.4%	-0.9%	1.2%	-0.3%	-2.1%	1.3%	4.5%	0.5%	0.4%	0.4%
1969	1.4%	3.6%	-3.0%	0.3%	0.2%	8.6%	4.8%	1.0%	4.1%	-2.2%	3.7%	4.9%
1970	8.5%	-3.4%	0.4%	1.5%	6.3%	1.2%	0.4%	-0.8%	-0.9%	1.6%	0.1%	0.3%
1971	0.3%	2.0%	1.1%	4.6%	-5.7%	0.1%	-2.6%	-0.6%	-0.4%	-3.6%	-0.2%	3.3%
1972	1.2%	2.3%	2.1%	2.2%	1.2%	1.3%	0.3%	2.2%	1.3%	1.3%	5.3%	1.1%
1973	-1.9%	-3.9%	-3.0%	-0.6%	0.4%	0.5%	1.4%	3.2%	-0.2%	-0.8%	0.6%	0.9%
1974	3.0%	1.1%	1.6%	3.7%	3.9%	0.6%	0.4%	4.2%	-0.4%	0.4%	0.5%	0.5%
1975	0.0%	-1.1%	0.6%	-1.9%	-1.8%	-1.9%	4.3%	3.6%	1.9%	-0.8%	-1.1%	2.2%
1976	-1.4%	-0.8%	2.2%	-0.7%	-1.0%	3.4%	-0.7%	1.4%	2.0%	-2.6%	0.0%	4.0%
1977	-1.6%	0.3%	0.3%	0.3%	0.2%	0.7%	-1.3%	0.2%	1.1%	0.4%	0.4%	0.4%
1978	0.4%	1.6%	0.0%	-6.8%	-0.1%	0.5%	1.2%	1.9%	-0.5%	0.7%	2.4%	1.1%
1979	-2.0%	1.8%	0.2%	0.1%	-1.9%	0.7%	-0.9%	4.7%	0.7%	4.8%	-1.8%	0.0%
1980	2.1%	0.8%	9.5%	0.8%	-0.7%	1.7%	0.5%	0.8%	-0.8%	0.3%	-4.5%	3.2%
1981	1.0%	-0.1%	0.3%	0.8%	1.9%	2.1%	1.9%	4.6%	1.0%	0.5%	2.0%	-1.6%
1982	0.8%	0.6%	0.8%	0.8%	-0.8%	2.4%	-0.4%	0.8%	0.6%	5.9%	2.3%	0.4%
1983	0.5%	0.5%	0.6%	0.5%	0.5%	0.6%	1.9%	0.9%	0.5%	0.5%	0.1%	1.1%
1984	-0.4%	-4.3%	0.7%	0.8%	4.9%	1.2%	1.0%	0.1%	-0.3%	-0.6%	-1.4%	2.2%
1985	5.3%	0.8%	-0.2%	1.9%	4.6%	1.3%	-0.7%	-1.3%	1.1%	-2.1%	6.1%	4.0%
1986	0.1%	6.0%	4.0%	-0.9%	1.8%	1.6%	-3.5%	4.7%	-4.0%	2.6%	0.9%	-1.1%
1987	5.6%	-0.1%	0.4%	2.7%	0.4%	0.4%	0.8%	-0.8%	-0.4%	11.0%	-1.2%	0.6%
1988	1.2%	0.1%	0.3%	0.5%	0.6%	2.5%	-0.8%	0.2%	0.7%	1.1%	-1.4%	0.3%
1989	4.9%	-2.6%	1.7%	2.6%	0.8%	-0.5%	7.3%	1.3%	-0.4%	-2.5%	1.1%	1.5%
1990	0.2%	0.4%	-0.7%	3.0%	-5.8%	-0.1%	0.1%	3.2%	3.9%	1.0%	-1.6%	0.5%
1991	0.4%	3.1%	-0.6%	0.4%	0.4%	0.4%	0.4%	0.1%	-0.2%	-0.2%	-2.6%	5.5%
1992	0.0%	0.9%	0.3%	0.3%	0.3%	0.6%	1.4%	-2.4%	0.8%	0.1%	2.3%	0.9%
1993	0.7%	0.7%	1.6%	-2.3%	2.0%	-0.2%	-0.5%	2.8%	-2.6%	2.4%	-1.6%	0.9%
1994	3.6%	0.4%	3.5%	-0.5%	-0.3%	3.1%	-2.1%	-1.7%	-2.9%	1.6%	2.7%	-0.5%
1995	-0.8%	-0.6%	1.7%	4.0%	4.1%	1.9%	3.0%	-0.1%	3.4%	1.0%	3.2%	3.3%
1996	1.9%	0.9%	-0.4%	-0.2%	0.3%	0.4%	-1.2%	-1.8%	-0.2%	2.3%	6.5%	-2.2%
1997	0.2%	1.2%	0.1%	0.4%	0.2%	2.3%	3.1%	-0.8%	0.5%	2.5%	2.0%	2.0%
1998	0.5%	3.4%	3.2%	-0.3%	-0.3%	2.7%	-0.1%	-9.0%	3.2%	3.2%	1.6%	2.1%
1999	3.0%	-0.4%	0.3%	0.3%	0.3%	0.3%	0.3%	-0.1%	-2.1%	0.3%	-0.6%	0.4%
2000	-1.0%	1.0%	4.0%	-1.9%	-0.7%	1.1%	0.0%	2.5%	-1.3%	-0.4%	-2.3%	0.5%
2001	1.7%	-2.4%	0.3%	0.3%	0.1%	1.3%	-0.1%	1.4%	0.2%	0.2%	0.1%	0.0%
2002	0.8%	2.0%	-1.4%	1.9%	1.6%	0.1%	0.1%	0.1%	-0.3%	2.4%	1.8%	0.1%
2003	-1.2%	-0.3%	-0.7%	2.2%	2.3%	0.7%	0.1%	-0.2%	0.3%	-0.3%	0.2%	-3.2%
2004	0.1%	0.2%	-2.2%	1.8%	0.1%	0.1%	-1.3%	-0.1%	0.7%	2.4%	2.9%	1.9%
2005	-0.5%	1.9%	-1.7%	-2.0%	2.4%	0.0%	3.1%	-0.4%	0.5%	4.2%	2.0%	0.7%
2006	0.0%	0.3%	0.3%	0.3%	0.0%	1.9%	2.7%	1.2%	0.8%	2.7%	2.2%	2.3%
2007	-1.1%	4.0%	4.2%	0.3%	-1.1%	2.1%	0.2%	-0.3%	0.3%	0.6%	0.2%	2.6%
2008	0.2%	-1.1%	0.0%	1.8%	0.0%	4.4%	0.7%	-1.0%	1.7%	4.3%	3.9%	0.9%
2009	1.0%	2.3%	-0.5%	-0.8%	-1.5%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.2%
2010	0.0%	0.1%	-2.0%	0.0%	-5.7%	-2.4%	3.0%	-1.7%	3.2%	1.8%	-0.2%	2.0%
2011	0.0%	0.0%	0.0%	0.0%	1.1%	-1.4%	-1.7%	-4.6%	-2.6%	3.0%	0.0%	0.3%
2012	1.6%	1.4%	0.9%	2.5%	-4.9%	2.7%	0.9%	1.5%	1.9%	-0.8%	0.2%	0.6%
2013	2.2%	1.1%	2.9%	-0.3%	0.0%	-1.6%	0.3%	0.0%	0.0%	-0.1%	0.5%	0.0%
2014	0.0%	0.9%	0.0%	2.5%	1.7%	0.1%	-2.1%	4.4%	-1.8%	1.1%	1.9%	-0.4%
2015	-2.2%	4.0%	-0.2%	0.5%	0.8%	-2.0%	0.1%	3.0%	0.9%	-0.1%	-0.1%	-1.1%
2016	0.6%	-0.2%	3.2%	0.5%	-0.8%	-1.2%	2.7%	-0.1%	-0.2%	-1.5%	1.9%	0.0%
2017	0.0%	0.0%	0.1%	2.0%	1.9%	1.1%	0.1%	3.6%	1.8%	0.1%	0.1%	0.1%
2018	0.1%	0.1%	-0.1%	0.1%	1.0%	-0.1%	1.7%	1.2%	0.3%	-2.3%	0.1%	-2.4%
2019	2.1%	1.5%	2.0%	1.4%	-1.8%	4.4%	0.8%	-1.7%	1.2%	0.8%	2.3%	1.9%
2020	0.1%	-4.8%	-5.9%	1.7%	0.9%	0.4%	0.2%	0.0%	0.4%	-0.8%	5.7%	1.0%
2021	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.2%	2.2%	0.0%	0.0%	3.4%
2022	0.0%	-2.5%	0.7%	0.0%	0.1%	0.1%	0.1%	1.1%	3.3%	-0.2%	-2.4%	1.0%
2023	-0.6%	1.0%	2.2%	2.1%	0.4%	-0.6%	-1.9%	2.1%	4.9%	2.5%	-4.6%	0.4%

As we can see, the strategy has experienced various conditions and shown durable performance.

As we mentioned at the onset of this note, these strategies aim not to outperform passive beta but to provide uncorrelated alpha. Consistent with this objective, we have thus far shown S&P 500 beta excluding dividends. The purpose of excluding dividends is that our Alpha Strategy aims to predict asset price returns over cash, with dividends simply reflecting a near-constant drift factor within the total returns of an asset. Therefore, we exclude dividends from our alpha and beta simulations for the purest evaluation of alpha. This exclusion does not mean we ignore dividends but recognize that they are not part of the evaluation of an alpha seeking to predict prices. This nuance does not take away from the value-addition from our signal, and we show how we can create outperformance relative to a passive benchmark with dividend reinvestment using our approach.

Below, we show passive beta exposure (with dividends reinvested) compared to an Alpha Overlay portfolio, which contains 60% exposure to passive beta, with our Alpha Strategy added as a leveraged overlay.



The Alpha Overlay portfolio outperforms passive S&P 500 exposure with higher cumulative returns (11.6% vs. 11.1%), lower volatility (13.8% vs. 16.7%), and reduced maximum drawdowns (29% vs 55%). Therefore, whether we're looking to generate absolute returns or enhance benchmark returns, we think our Alpha Strategies will offer an able guide to navigating macroeconomic dynamics.

These strategies are neutral on equity markets after being both long and short equities in 2023, resulting in positive returns and a -63% correlation between the S&P 500:

Currently, these strategies remain neutral on equities as the expected path of the economy does not diverge meaningfully from what markets have priced in. As these conditions change, so will our positions. In the following pages, we will elaborate on the macroeconomic dynamics driving this systematic assessment of conditions.

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