

Prometheus ETF Portfolio: Next Gen Primer

We started Prometheus with a simple premise: bring the highest quality of institutional-grade macro investment research to everyday investors. Today, we take another big step in this direction with the launch of the next generation of our systematic Prometheus ETF Portfolio.

The Prometheus ETF Portfolio aims to allow everyday investors to access an investment solution that combines active macro alpha, passive beta, and strict risk control, all in an easy-to-follow, low-turnover solution. We aim to achieve strong risk-adjusted returns relative to cash, with limited capital drawdowns in depth and duration. We do this in a highly accessible package, which rotates between five highly liquid ETFs, readily available to any investor with a brokerage account.

As always, our systematic approach has allowed us to simulate the strategy's performance far back in history, allowing us to deeply assess the durability of our approach and learn from history. In this primer, we describe the intuitions underlying the investment process and help develop a better understanding of what to expect for those who choose to follow the strategy. Before we dive into our approach, we outline the key objectives of the Prometheus ETF Portfolio:

Prometheus ETF Portfolio: Investment Objectives

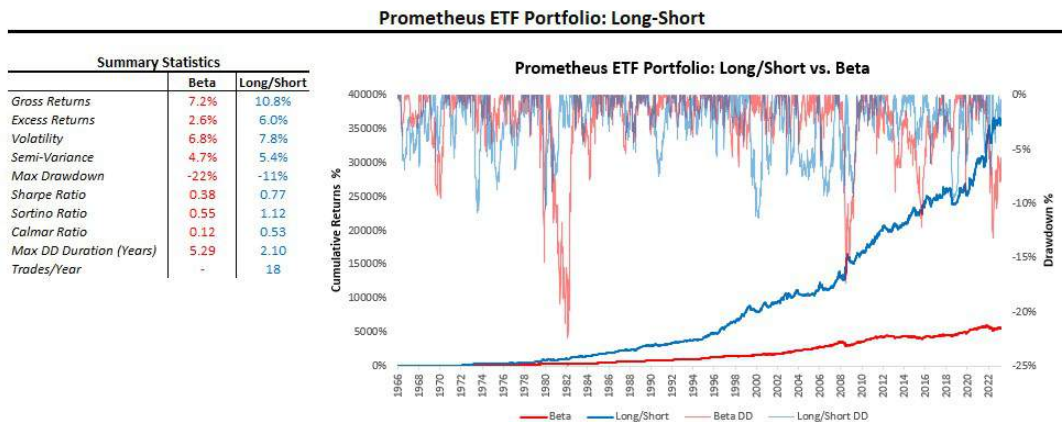
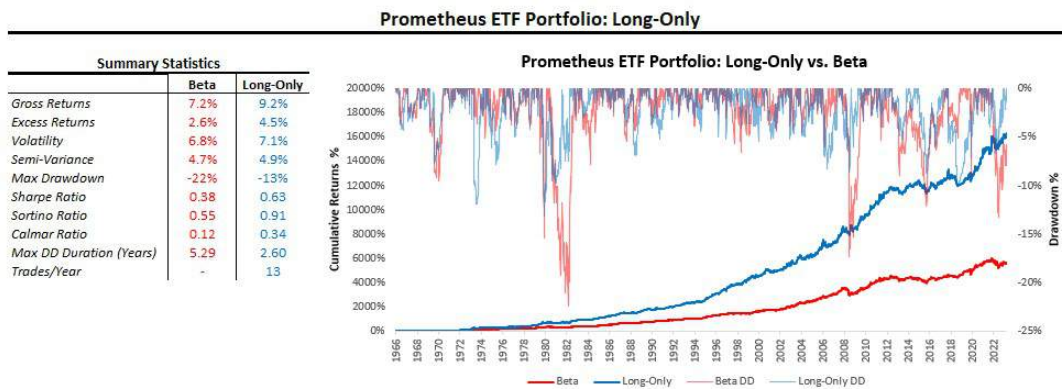


For most investors, we think investing in a portfolio balanced to economic outcomes, i.e., a combination of stocks, bonds, commodities, and gold, is an excellent base allocation. To us, this balanced portfolio is a great beta portfolio. However, we think we can make this even better. Particularly, we think that by using a rigorous and systematic approach to macroeconomic analysis, we can avoid particularly poor periods of asset returns. Furthermore, using a quantitative approach to assessing risk and return, we can improve the return characteristics of both assets within a beta portfolio and the overall portfolio. As such, the Prometheus ETF Portfolio strategy is intended to be an improvement to the baseline allocation for everyday investors.

We will deliver the allocations from our systematic process through our weekly research notes. In signature fashion, these notes will contain significant colour on how we see economic conditions evolving, what it means for asset markets, and how our systems are positioned in that context. These ETF Portfolio research notes will provide a comprehensive roadmap for understanding current conditions and shaping expectations for how the macroeconomic conditions will likely develop. Now that we have provided a high-level background on the product, we dive deeper into our approach to create a more nuanced understanding.

Prometheus ETF Portfolio: Overview

To begin our analysis, we share a brief overview of the simulated performance of our systematic approach. Below, we show two different applications of our systems in separate panels: long-only and long-short. Both approaches are compared to a buy-and-hold portfolio of stocks, bonds, commodities, and gold. Our active long-only and long-short portfolios take active management decisions on the same basket of assets. There are no hidden assets or diversification, and any outperformance is from market timing driven by our systematic process. We visualize the full-sample comparative returns and cumulative drawdowns and share the summary statistics. As we can see, our simulated approach has significantly outperformed passive beta:



Zooming in on the long-only strategy, we see that the Prometheus ETF Portfolio has outperformed beta in terms of absolute (gross returns) and risk-adjusted returns (Sharpe, Sortino, Calmar). This is significant to note, as the long-only portfolio is an unlevered strategy. The choice of maintaining an unlevered strategy was made because we wish for our research to apply to the broadest possible audience, and often, leverage is excessively expensive and impractical for the retail investor. Even without leverage, gross returns on the unlevered strategy remain higher than the beta portfolio. Additionally, this is done with significantly fewer capital drawdowns with the Prometheus long-only portfolio, showing significantly less maximum drawdown versus beta, both in terms of size (-13% vs. -22%) and duration (5.29 years vs. 2.7 years). Overall, the long-only portfolio shows well-rounded outperformance relative to beta.

Turning to the long-short portfolio, we see that the outperformance characteristics of the long-only portfolio are amplified. This is evident from both the cumulative and risk-adjusted measures of returns. This

performance is consistent with more diversity of bets (longs and shorts) and short-side returns. Additionally, the portfolio is a leveraged portfolio, which adds to volatility and returns. That being said, the portfolio is dynamically levered based on our signals rather than constantly levered, and the median gross exposure (ex-cash) is 1.22X, with a maximum of 2.22X, suggesting modest leverage. These leverage levels are easily accessible to more sophisticated investors, particularly those employing futures or options. ***Nonetheless, we recognize that levered long-short portfolios are largely inaccessible to most investors, and as such, our weekly ETF Portfolio notes will cater to the long-only community. From time to time, we will provide some insights coming from the long-short process when we think it is particularly relevant.*** For the rest of this note, we will continue to share our analysis of long-only and long-short. Parties interested in continuous long-short coverage can contact us for our bespoke products.

Before going further, we think it is essential to set some expectations for those interested in these solutions. The Prometheus ETF Portfolio is meant to be a "beta + alpha" product that durably delivers long-term outperformance. We are not trying to provide a pure uncorrelated alpha with a Sharpe Ratio over 1.00, a highly complex pursuit that only the most sophisticated institutions have achieved durably. Rather, we are trying to provide a solution that has beta up capture with minimal or negative down capture, which is more consistent with a Sharpe Ratio in the 0.50-0.70 range. Given our risk-controlled approach, we expect Sortino Ratios to be higher, in the 0.70-1.00 range. We think it is important for investors to recognize that achieving these objectives is consistent with a near doubling of equity market return to risk characteristics, which typically have Sharpe Ratios in the 0.2-0.4 range. Furthermore, consistently achieving the higher ends of these return-to-risk characteristics (Sharpe 0.70, Sortino 1.00) would put an investor somewhere amongst the ranks of the top 10% of asset managers of all time. This observation may be at odds with marketing decks of most funds raising capital and what is advertised in print media, but it is more consistent with the live trading performance of fund managers. We cannot make everyday investors have the performance characteristics of highly sophisticated funds, but we can try to narrow the gap between them. As such, the purpose of the Prometheus ETF Portfolio is not to create an elite hedge fund strategy but rather to provide an accessible, easily implementable, significant improvement to investors' baseline allocation. Having set the table regarding expectations, we now turn to our investment approach.

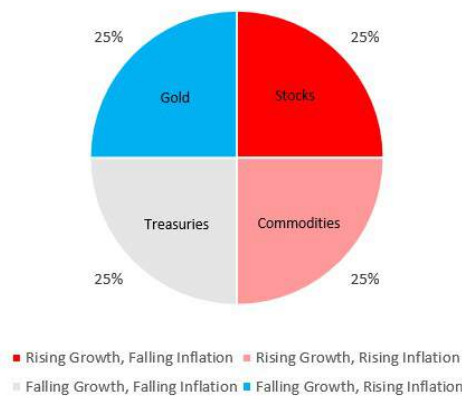
Investment Process

In this section, we provide an overview of our systematic process for portfolio construction so as to provide a better understanding of what may drive the portfolio's positioning at any given time. Like all earned edges, the intuition is straightforward, but the implementation is complex. The visual below illustrates the process:



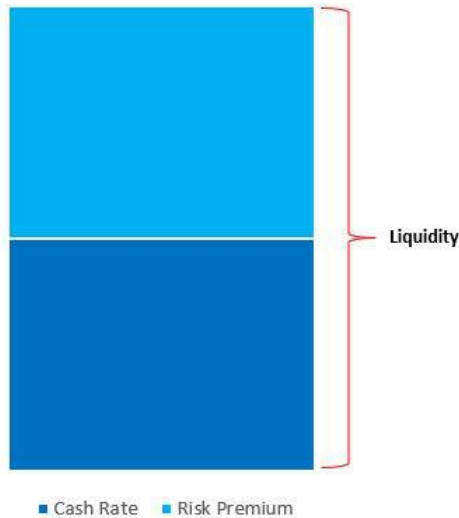
As previously described, we think that a balanced portfolio of stocks, commodities, bonds, and gold is a great starting place for the majority of investors. The purpose of using this mix of assets is to create a portfolio that is balanced to economic outcomes in growth and inflation by holding assets that can perform in every permutation of growth and inflation environments:

Balanced Portfolio: Risk Allocations



Crucially, all of the above assets have positive expected returns but are likely to perform at different periods. As such, this creates a well-diversified base allocation, which is largely insulated from the fluctuations of growth and inflation environments. Now, it is important to recognize that while this combination of assets may offset growth and inflation risk, this portfolio remains exposed to risks coming from liquidity. Recall liquidity is the flow of cash and cash-like assets that potentiates spending in the economy and markets. Every asset is exposed to liquidity risk. The less liquidity in the system, the more the drag on assets. A balanced portfolio of assets makes money over the long term by liquidity flowing from the risk-free cash rate to risky assets to earning risk premium. As such, a balanced portfolio of assets earns both the risk-free rate plus a risk premium for underwriting financial assets. We visualize this below:

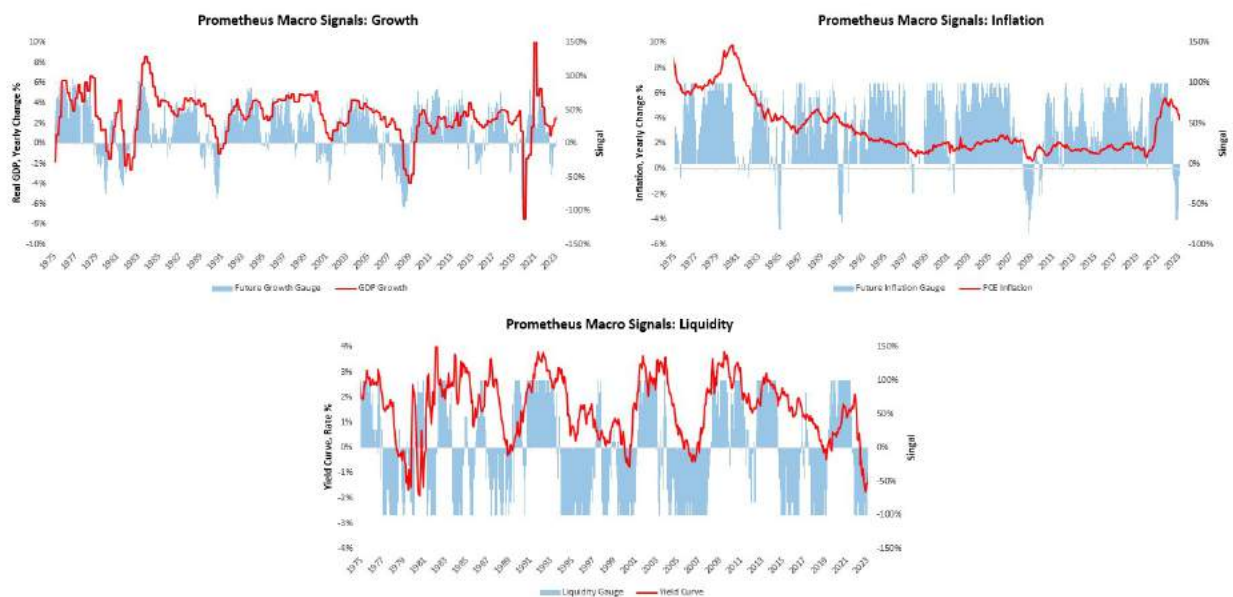
Balanced Portfolio: Expected Return Drivers



The cash rate and risk premiums are not entirely uncorrelated and often tend to cascade in a similar direction as liquidity tends to dry up in financial markets. As such, falling liquidity can often cause asset prices to underperform cash individually and in aggregate. There is no macroeconomic beta exposure that directly benefits from this environment, and therefore, an active management approach is required where we choose to rotate into cash or short assets (outright or relative to one another) in order for our portfolio to continue to have positive expected returns during periods of tightening liquidity.

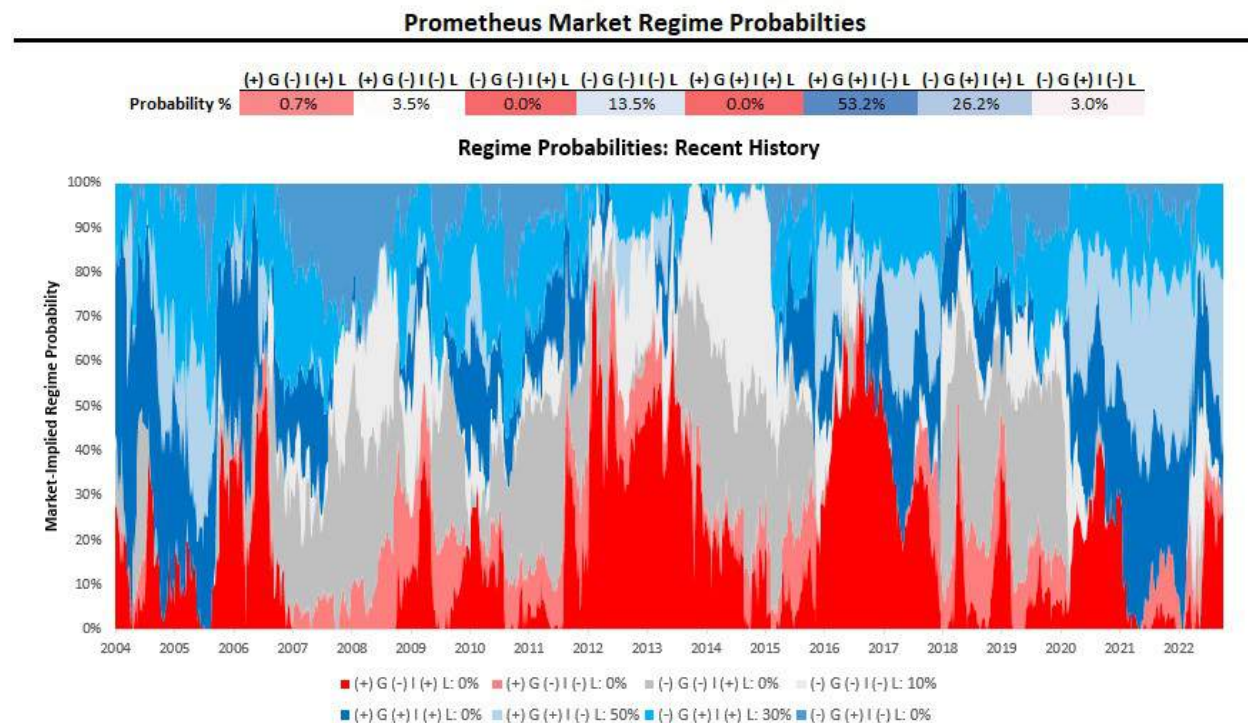
This brings us to our departure from passive investing, as we think not only is there potential to anticipate liquidity but also to anticipate changes in the overall macroeconomic cycle. We use an extremely wide range of tools to understand the path of the economy ahead of us. Below, we show some high-level illustrative examples:

Prometheus Macro Signals: Systematic Fundamental Outlook



To protect our edge in markets, we do not share what goes into our systematic process. However, we do share the intuitions behind the views coming from this process in great detail in our written materials. We will communicate our ongoing assessment of economic conditions in our weekly research notes, which will be provided alongside the ETF Portfolio allocations. Now, we think it is extremely important to recognize that while a fundamental outlook is an essential part of macro investing, expressing that view in a timely fashion in markets is essential to having a smooth return profile.

Being early to a position in markets can have a significantly dampening effect on portfolio returns and significantly enhance volatility, both of which are detrimental to long-term performance. Furthermore, all macro views, at their very best, have a 60% chance of being correct. For these reasons, we wait for markets to begin pricing in our fundamental expectations to be able to enter or size up positions. We do this using our market-regime monitors, which measure the market-implied probabilities of various macro regimes. We visualize this below:

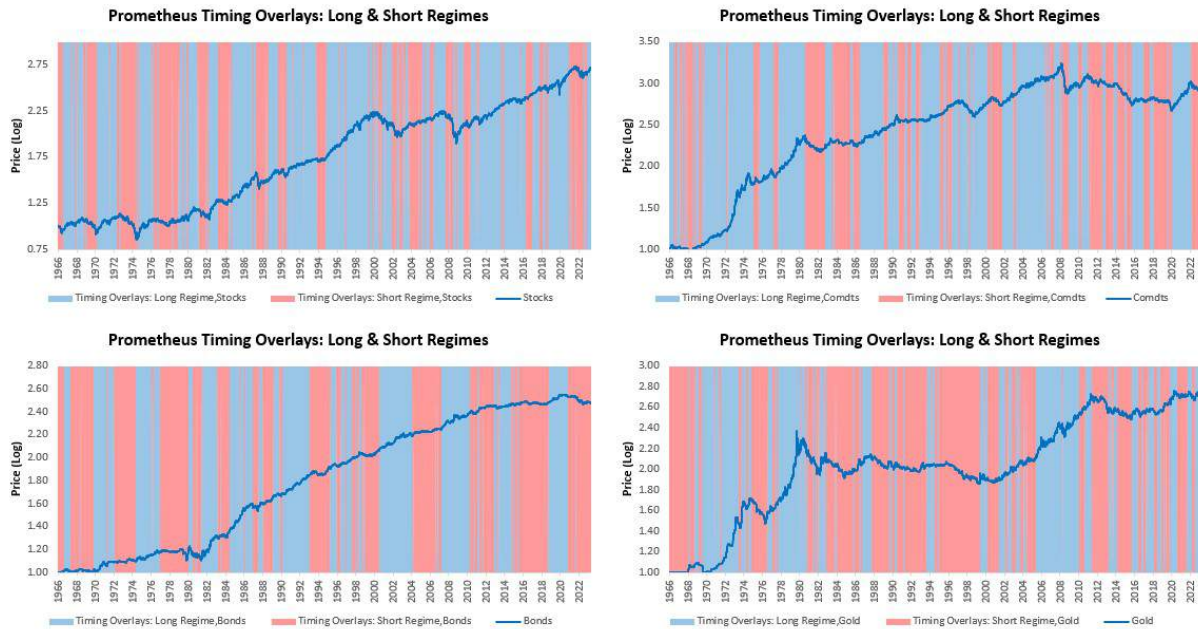


Permutations of growth, inflation, and liquidity— allow for markets to price eight different regimes with varying probabilities:

- **(+) G (-) I (+) L:** *Rising Growth, Falling Inflation, Rising Liquidity*
- **(+) G (+) I (+) L:** *Rising Growth, Rising Inflation, Rising Liquidity*
- **(-) G (-) I (+) L:** *Falling Growth, Falling Inflation, Rising Liquidity*
- **(-) G (+) I (+) L:** *Falling Growth, Rising Inflation, Rising Liquidity*
- **(+) G (-) I (-) L:** *Rising Growth, Falling Inflation, Falling Liquidity*
- **(+) G (+) I (-) L:** *Rising Growth, Rising Inflation, Falling Liquidity*
- **(-) G (-) I (-) L:** *Falling Growth, Falling Inflation, Falling Liquidity*
- **(-) G (+) I (-) L:** *Falling Growth, Rising Inflation, Falling Liquidity*

Using these market regime probabilities allows us to better understand when markets have begun to price in our systematic fundamental outlook, allowing us to pro-cyclically add to exposures as markets begin to price in our views. Furthermore, this process also curtails our systems from taking on positions solely based on fundamental conditions. At the end of the day, investment profits are based on price and not fundamental expectations; thus, managing risk based on market conditions is paramount to creating smooth return streams. Consistent with this thinking, we also use a variety of timing overlays to detect price regimes:

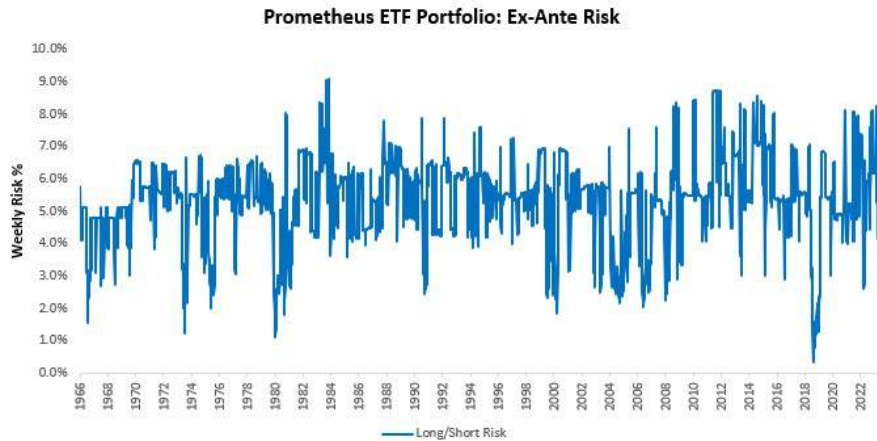
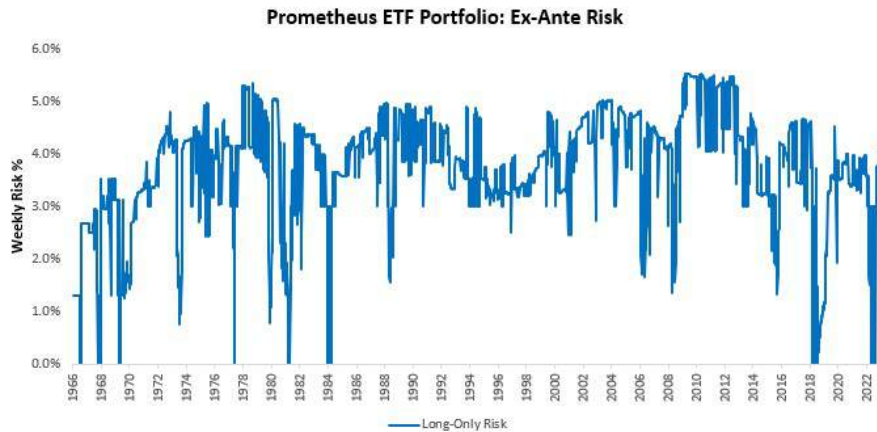
Prometheus Timing Overlays: Price Regimes



As directional investors, there are only two quantitative ways to invest: going with price (for example, buying rising assets) and going against price (for example, buying assets when they correct in price). We combine both measures to detect prospective price regimes on the long and short side. This allows us to take positions in assets that we think have room to move, as well as follow price trends.

Upon integrating the signals coming from these various components, our systems seek to manage risk at the portfolio level. We think every investment stream, alpha or beta, is a return compensation for taking risk. This risk is the risk of capital loss. As such, we think that risk is double-edged; with too little risk, strategies are likely to provide poor returns, and on the other hand, with too much risk, capital losses can be highly damaging. We manage this risk dynamically with two objectives in mind: take an adequate amount of risk to generate positive returns while avoiding risk that brings us into capital drawdowns over 15%. We visualize this process below:

Prometheus Portfolio Risk Control: Ex-Ante Risk Estimates



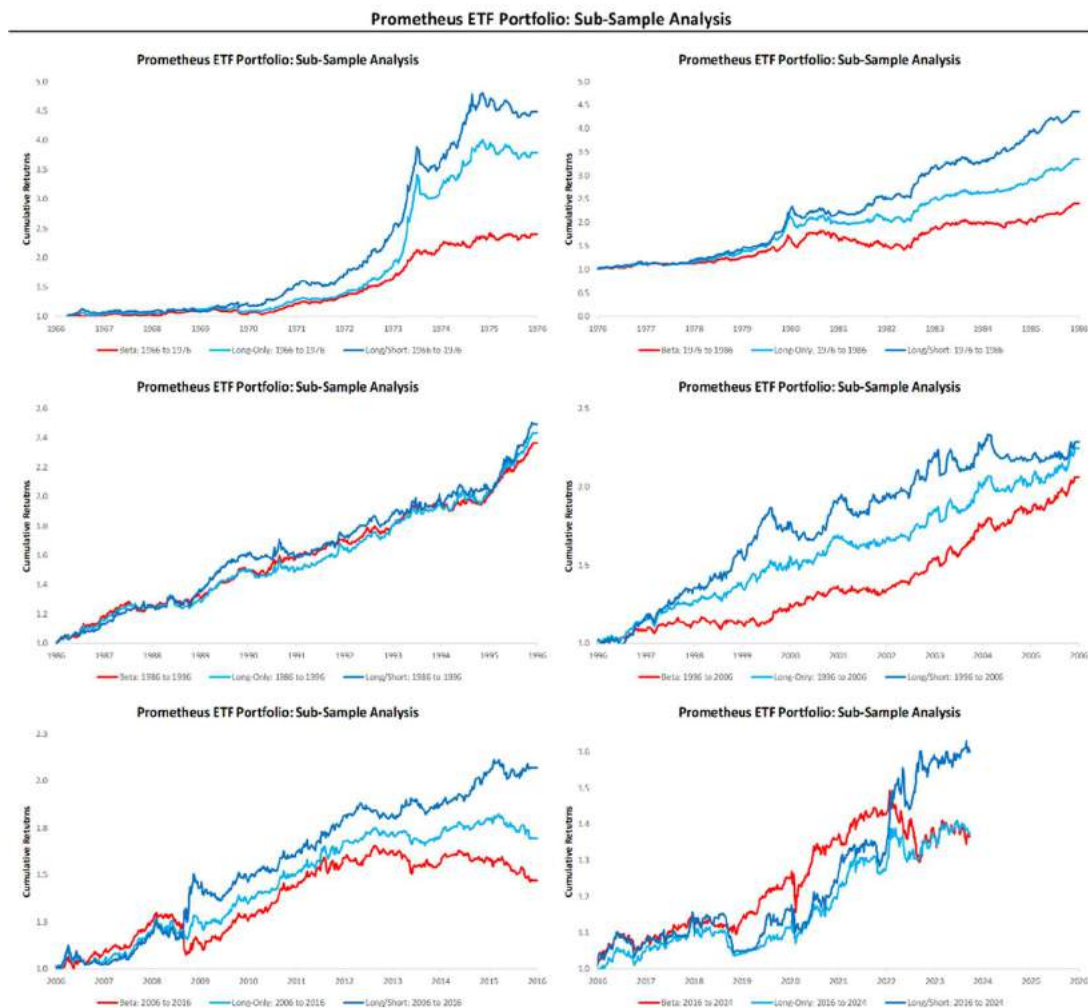
This process allows our systematic process to calibrate dynamically based on market conditions by estimating the worst-case potential loss on the portfolio at any given moment. Keep in mind these worst-case loss conditions are multi-standard deviation events; as such, the probability of achieving the worst-case losses is extremely small but still within the range of possibility. Nonetheless, we think knowing these worst-case losses and calibrating portfolio exposure based on this risk allows us to cap downside risk better.

Furthermore, we can size up and down bets based on where our capital base is: at all-time highs in our capital base, we are comfortable taking more risk, while during drawdowns, we become more conservative. The purpose of this process is to create a somewhat asymmetric return to risk profile by limiting large or sustained losses. Additionally, this allows us to effectively communicate risk ahead of taking on positions to those following our research. Thus, those wishing to scale up or scale down risk will be able to do so. Now that we have outlined those concepts going into the portfolio, we move to our empirical assessment of simulated performance.

Simulated Performance Assessment

As systematic investors, we think a rigorous evaluation of how our systems performed relative to our expectations is important both to shape expectations and to generate avenues for improvement. We think that stress-testing portfolios through a range of macroeconomic environments is paramount to this process. While most modern analysis occurs during the post-1996 period, we have invested a significant amount of time and effort into simulating macroconditions and markets going back to the 1960s. This gives us a much broader range of outcomes to stress test our systems and assess & understand their performance.

We begin our assessment of our simulated performance using an intuitive lens by breaking up our historically simulated performance into sub-samples. We look at five and a half decades of history, broken into 6 decade-long periods. These sub-samples include a very wide range of macroeconomic conditions, ranging from stagflation to quantitative easing and COVID-19. As we can see below, the performance patterns for our strategies have been consistent across decades, i.e., our long-only portfolio outperforms beta, and our long-short outperforms our long-only:

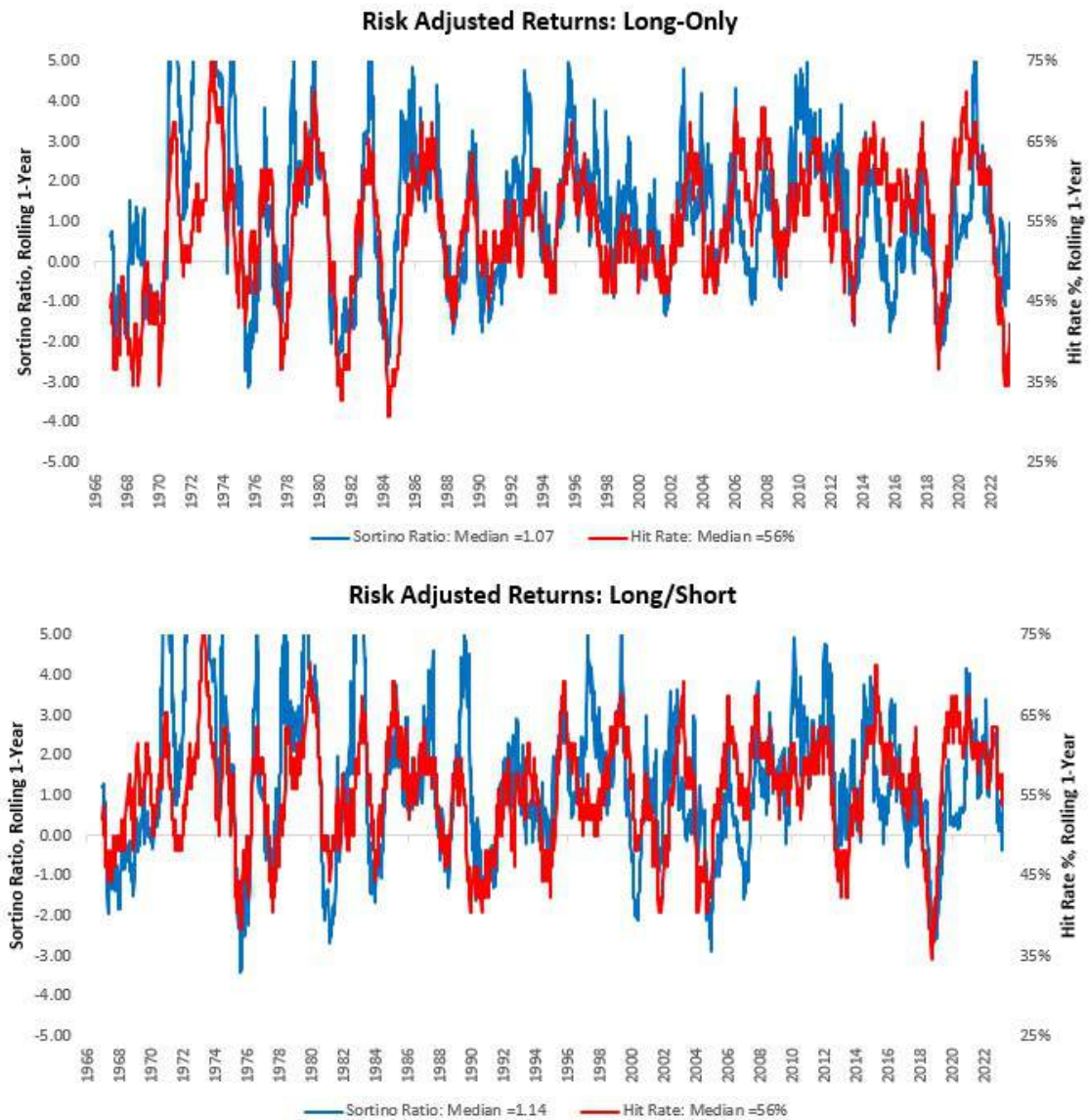


As we can see above, our active strategies have outperformed beta exposure over the decades to varying degrees. They have done so during Stagflation (1960-1980), the Great Moderation (1985-2008), the Dotcom

Bubble (2000), the Financial Crisis (2008), Zero Interest Rate Policy & QE (2008-2015, 2020-2022), COVID-19 (2020), and Fiscal Dominance (2020-Present). Indeed, there has been a variance in performance over the decades, but the portfolio delivers on its objectives of maintaining exposure to beta, with downside alpha and controlled drawdowns.

To better understand the return characteristics of the portfolio, we examine the rolling risk-adjusted performance of both strategies. We offer two perspectives, which are related: the hit rate on the portfolio (how many trades we get right at the portfolio level) and the Sortino Ratio (how that translates into risk-adjusted returns). We show both measures for our long-only and long-short portfolios below:

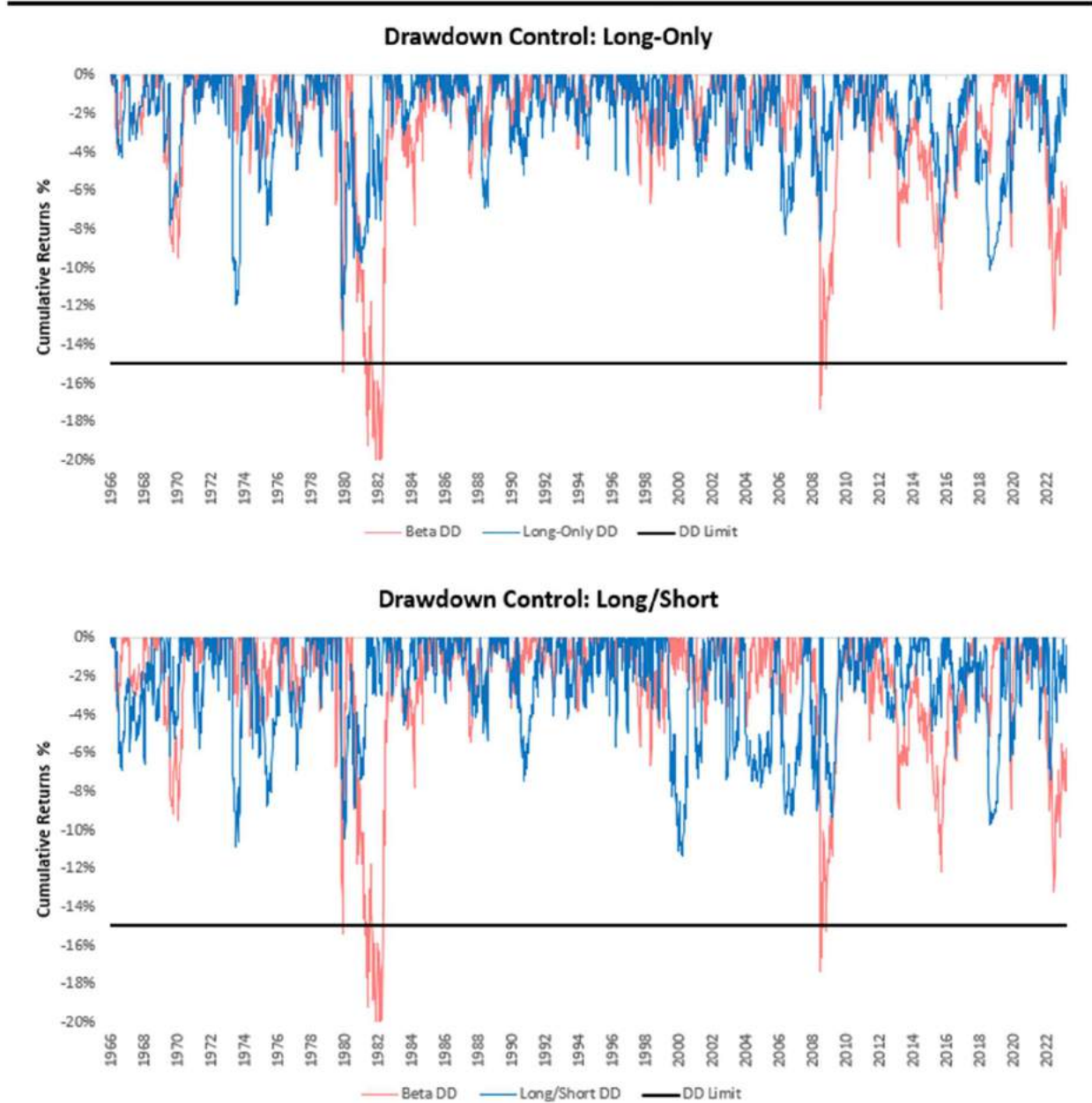
Prometheus ETF Portfolio: Risk-Adjusted Returns



As we can see above, both our long-only and long/short portfolios show healthy median Hit rates and Sortino ratios, which revert to the mean over time. Nonetheless, there are periods where both can fall significantly.

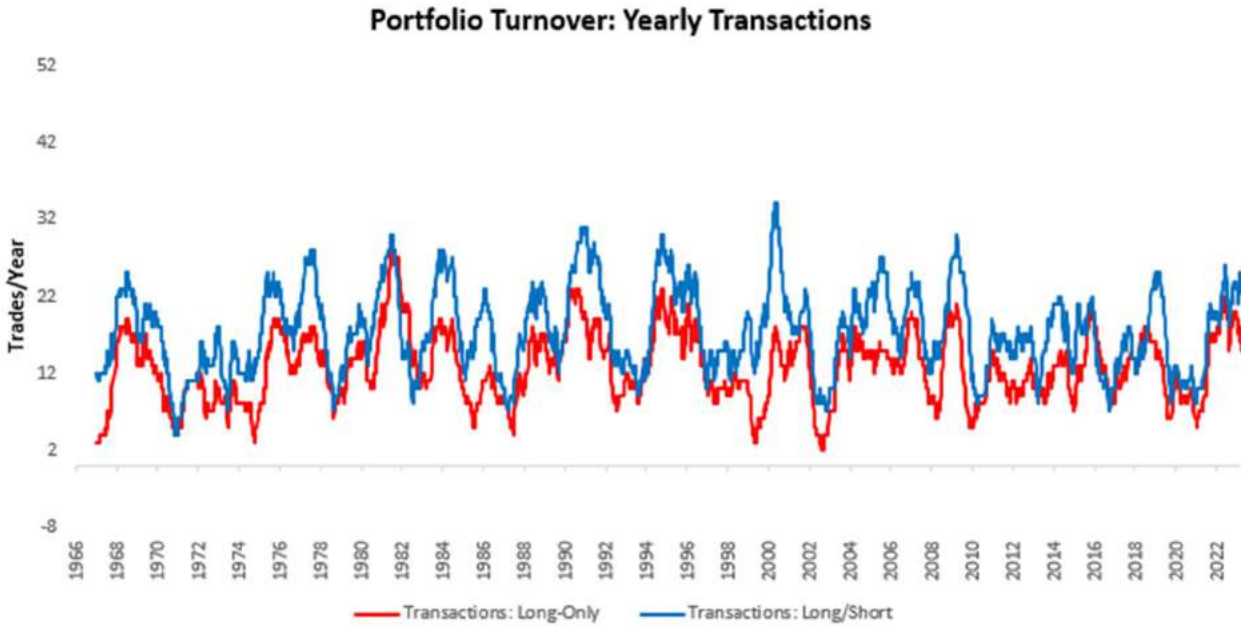
Now, while a one-year period is not a feasible time frame to evaluate an investment strategy, we think managing this path dependence in markets is imperative to continued success. Our risk control measures, which include both an ex-ante and ex-post evaluation of risk, are an integral part of this process. We show this below:

Prometheus ETF Portfolio: Risk-Adjusted Returns



As we can see, both our long-only and long/short portfolios have remained well-removed from our drawdown limit of 15% through scaling our positions both based on forward-looking risk and an evaluation of the current degree of drawdown. Overall, the portfolio has conformed with the objectives set out at the outset of this note: attractive risk-adjusted returns relative to cash, outperformance over beta, and drawdowns limited to 15%. Lastly, these have been achieved with relatively low transactions. All of our

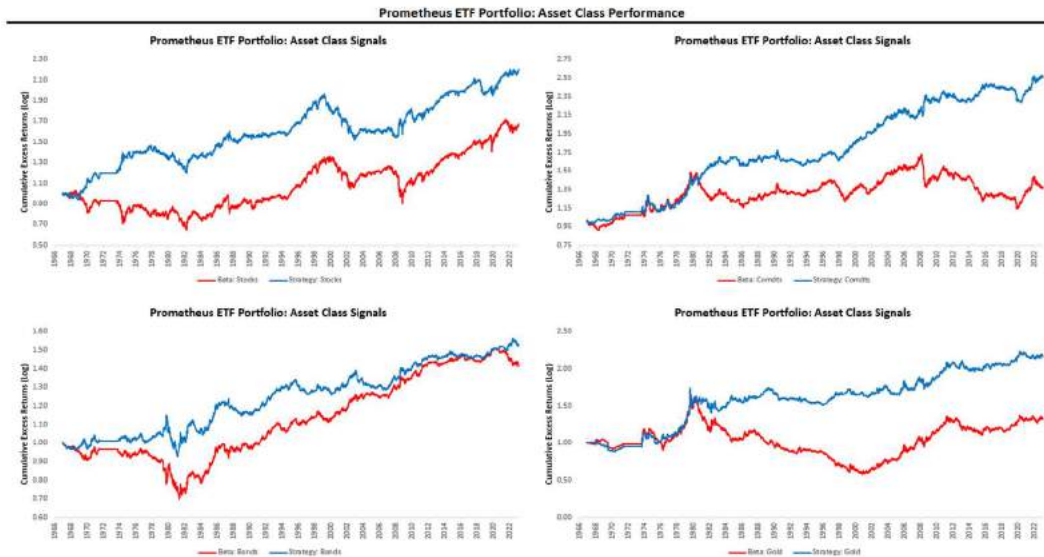
return statistics are cited net of transaction costs, applied to beta, long-only, and *long/short*, scaled by the notional turnover. Below, we show the trades per year for each strategy:



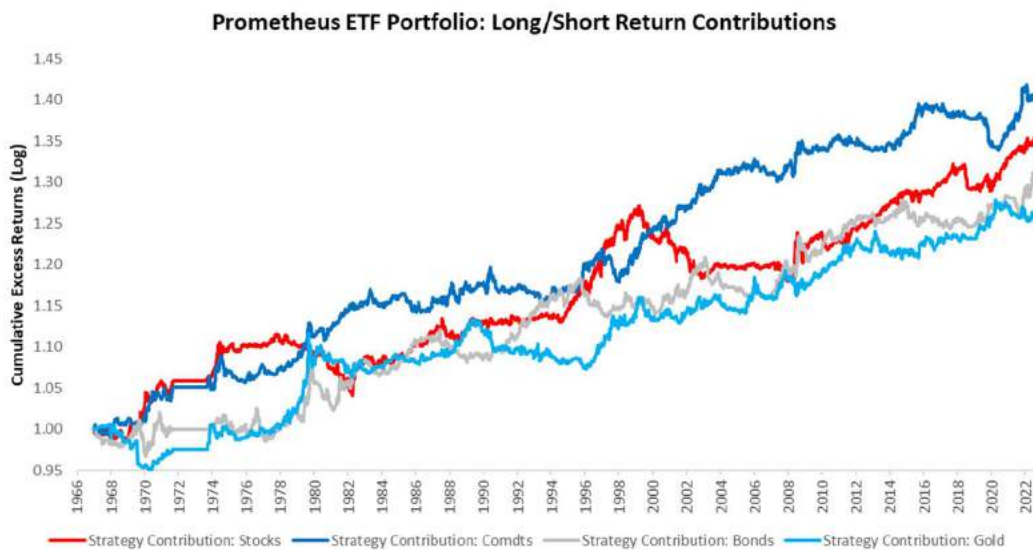
With a median number of transactions per year of 13 trades for our long-only strategy and 17 trades for our long/short strategy, total portfolio turnover remains well-limited for active strategies. Of course, there will be periods where our strategies will trade more based on changing conditions, but we expect these transactions to generate return opportunities that will offset any minimal rise in transaction costs.

Conclusions and Applications

The Prometheus ETF Portfolio is a solution designed to balance high performance and accessibility, which aims to provide a significant step up to everyday investors' allocations. The portfolio is meant to be traded as a whole, but each individual component has shown outperformance relative to its benchmark beta. Thus, while we think the portfolio is best applied as published, the individual asset views can be applied to each respective asset. We visualize this below:



While our simulated strategies have outperformed each of their individual betas, we think it is crucial to recognize that this is not what the strategies have been designed for. Our systems are meant to work across asset classes rather than specific to any individual one. We visualize how this process has led to even return contributions across assets.



Nonetheless, we recognize that many investors may be constrained in their ability to tilt towards these allocations and think our signals will add value to even standalone allocations, though we once again note they are not optimized to do so. Overall, after a great deal of time, resources, effort, and careful evaluation, we think that the Prometheus ETF Portfolio model offers a durable and consistent step up in the quality of return-to-risk characteristics for an everyday investor. Our objective is to provide a research process that equips investors to generate a Sharpe Ratio of approximately 0.60 (with a range of 0.50-0.70) and a Sortino Ratio of 0.70 (with a range of 0.60-0.80). **We do not think of this as the holy grail of investing, but the achievement of these objectives would put the individual investor in line with the top 25% of all active managers, with no fees other than a subscription cost.**

We will provide subscribers allocations to the long-only portfolio weekly via our Prometheus ETF Portfolio research notes. The long/short portfolio will be available to all Prometheus Bespoke subscribers. At key points in the macrocycle, we will share long/short positions with Prometheus ETF Portfolio subscribers as well. Alongside these allocations, we will continue to provide our best-in-class analysis of economic and market dynamics, providing insights from our signals and also from our discretionary assessment of conditions. For those wishing to see samples of our macro research process, we recommend pursuing our website, where we have shared thousands of pages of research.

We look forward to continuing on our mission to democratize access to institutional-quality research and insights to the investing public. Over time, we plan to improve our systems and expand our offering to help the broadest possible audience. Another step towards the democratization of finance. Until next time.

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