

# The Ex-Ante Problem - Part II

Long Volatility

*Evaluating the tradeoffs and portfolio applications of different long volatility approaches.*

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## The Ex-Ante Problem: Long Volatility

In [Part I](#), we discussed the “ex-ante problem” of evaluating sound allocation decisions that were made out of uncertainty, with the deterministic lens of an outcome-oriented analysis. This is especially true for long volatility strategies, as the type of market turbulence in recent years has rewarded some approaches far better than others. The longer-term evidence favors the inclusion of multiple complimentary risk mitigation ingredients, including those that have produced minimal return over the recent evaluation window.

For long volatility strategies, allocators seek to mitigate the risk of major market declines and disruptive events. These market downturns can manifest in many different forms. Regardless of how they unfold, selloffs can be highly troublesome for equity-centric portfolios – even if the disturbance is mostly psychological. In the world of risk-mitigating strategies, managers and allocators need to make ex-ante choices as to what types of selloffs they wish to protect against, as any single strategy that can protect against a full array of market declines (e.g., leveraged shorting of the market) would assuredly come at too great a long-term cost to the portfolio.

To provide a framework, one can categorize the types of market declines. **Exhibit 1** below demonstrates stylistic market paths for each of these types of events.

- Deep, chaotic, and lasting declines (**Market Resets**), like the Great Depression and the GFC,
- Deep, chaotic, and quick like COVID and the 1987 Crash (**Major Crises**),
- Deep, orderly, and lasting like the Tech Bubble and 2022 (**Prolonged Declines**),
- A flash down and drift back up, like August 2015 Chinese Devaluation, February 2018 Vol-Mageddon, and the 2011 U.S. Debt Downgrade (**Mini Crises**),
- Deep, orderly, and quick to a full recovery like Q4 2018 Rate Hike and the 2010 European Debt Crisis (**Market Corrections**),
- A flash down and equally fast recovery like August 2024 and April 2025 (**Fast Crashes**).

**Exhibit 1: Types of Market Downturns**



Source: One River. For illustrative purposes only. Past performance does not guarantee future results.

The difficulty in evaluating risk mitigating strategies for allocators and long volatility managers alike is rooted in the frequency versus the magnitude of these downturns. In other words, the most uncommon types of risk-off events (Market Resets and Major Crises) also tend to have the most profound long-term negative effects on portfolios and thus are the most important to protect against. Likewise, the most frequent types of

declines are Market Corrections and Fast Crashes that recover quickly, which (while uncomfortable) are far less disruptive to long-term outcomes.

The frequency with which psychologically impactful (but economically less significant) declines occur can lead to the same ex-ante problem outlined at the beginning of this paper series. Put differently, the allocation decision to maximally improve portfolio compounding by protecting against major, sustained market declines brushes up against recent market outcomes that haven't taken that path. Specifically, recent market outcomes have favored strategies that run a higher constant exposure and that preemptively monetize intra-crisis gains – despite longer-term evidence that such strategies typically have a more punitive long-term carry profile and are less convex in major downturns.

## Different Approaches Offer Distinct Benefits

Distinct approaches to long volatility will perform differently across these various market downturns. Of course, different investors will have unique portfolio needs during different types of drawdowns. For One River's Dynamic Convexity strategy, our objective is to deliver convex returns during chaotic events that impair an equity-centric portfolio's long-term compounded value. That means we calibrate our models to come through during deep, chaotic drawdowns that don't immediately recover, which generally encompasses Market Resets, Major Crises, and Mini Crises in the above.

Our objective to improve long-term portfolio compounding requires that we prioritize these major disruptive events. We make the calculated choice in our model construction to not preemptively monetize intra-crisis gains and instead lean into mounting uncertainty. This means that intra-period gains produced during Fast Crashes might be given back in the event of an immediate market recovery. These types of quick drawdowns, even ones of significant depth, are less important for our process to hedge given our objectives. For instance, if a quick drawdown is immediately recaptured through a very rapid recovery, long-term compounding for an equity-centric portfolio is not impacted. Especially if we can partially monetize this accrued benefit through intra-period rebalancing into cheaper equity levels, as we have written about [here](#).

Our model is trained to identify these tipping points in panic and uncertainty, and our role in the broader portfolio is to lean into such moments by increasing long volatility exposure to maximally harvest gains in the moments that markets evolve from an orderly sell-off to a true panic. Historically, when such true panic occurs, we have seen our process deliver its highest returns and highest convexity with respect to equity losses. These are also the periods of time in which our process (concurrently) takes a meaningful amount of chips off the table to lock in accrued gains. After these types of indications of waning uncertainty, even a quick snap back in markets (e.g., COVID, August 2015, February 2018) should see our process produce strong outcomes. For our objectives, too much preemptive profit-taking directly impedes convexity potential in the face of Market Resets and Major Crises.

In order to reliably defend portfolios against major crises, we must accept the risk of producing muted returns in the types of market shocks that recover rapidly or are quite orderly and drift lower. During these types of events, other portfolio ingredients will exhibit higher reliability. Specifically, for Prolonged Declines, we have long been a proponent of multi-asset trend following and directional macro approaches. For Fast Crashes and Corrections that recover rapidly, short-term trend and long gamma approaches with preemptive monetization (e.g., short-dated equity options with active delta-hedging) are typically better-suited but are expected to come with notable deficiencies versus certain long volatility approaches in terms of benign market carry and the potential for convexity generation during major declines.

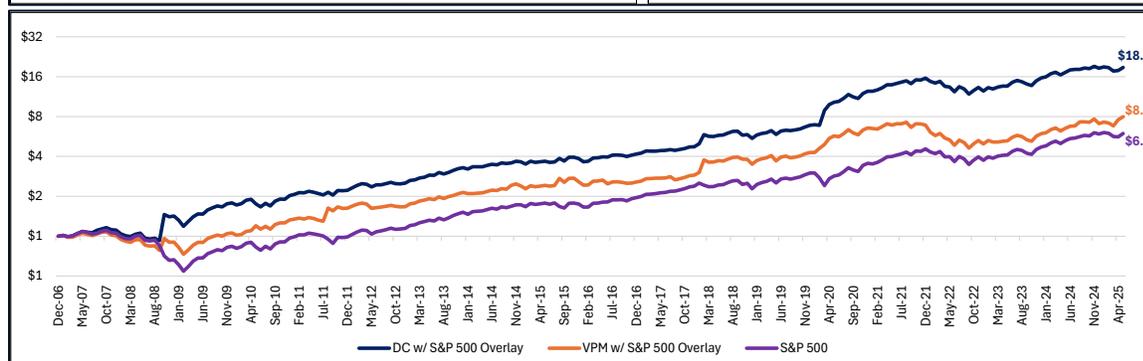
## Tradeoffs: Preemptive Monetization versus Dynamic Convexity

Next, we focus on these tradeoffs for long volatility strategies in monetization approach for intra-crisis gains. When markets first reach a tipping point of uncertainty, one can choose to preemptively monetize, or lean into the crisis until panic and uncertainty start to wane. To highlight these tradeoffs further, we demonstrate in **Exhibits 2-4** the long-term performance and market crisis outcomes between two different approaches. The first strategy is our Dynamic Convexity (DC) strategy, which, as described, is designed to dynamically harvest convex returns from markets as uncertainty grows, and to produce convex returns in major market downturns. The second strategy is a QIS strategy<sup>1</sup> that is likewise a VIX-focused and long volatility but preemptively monetizes gains intra-crisis, producing a return profile akin to a gamma-oriented approach that is frequently delta-hedged (thus, call it VIX Preemptive Monetization QIS, or VPM).

The intention of such a study is not to oversimplify these tradeoffs or to promote one approach versus another, but rather to demonstrate that such tradeoffs exist and to highlight the differences. **Exhibits 2 and 3** below summarize the long-term return characteristics of each approach – both standalone and in an equity overlay portfolio alongside a 100% S&P 500 exposure (the overlay methodology as used in our recent [paper](#)).

### Exhibits 2 and 3: One River Dynamic Convexity (DC) and VIX Preemptive Monetization QIS (VPM) Long-Term Gross Returns – Standalone and with 100% S&P 500 Equity Overlay, Monthly Rebalanced January 2007 – May 2025

	Dynamic Convexity (DC)	VIX Preemptive Monetization QIS (VPM)	DC minus VPM	DC w/ S&P 500 Overlay	VPM w/ S&P 500 Overlay	DC minus VPM
Ann. Ret	5.3%	0.7%	+4.6%	17.3%	11.9%	+5.3%
Ann. Vol	14.8%	15.8%	-1.1%	20.1%	18.2%	+1.9%
Ann. Downside Vol	8.3%	11.3%	-3.0%	8.6%	10.0%	-1.4%
Information Ratio	0.4	0.0	+0.3	0.9	0.7	+0.2
Sortino IR	0.6	0.1	+0.6	2.0	1.2	+0.8
Max DD	-24.0%	-45.2%	+21.1%	-24.3%	-36.3%	+12.0%
Skew	20.5	15.9	+4.6	4.5	1.0	+3.5
2007	5.2%	-4.5%	+9.7%	11.1%	0.8%	+10.3%
2008	85.9%	34.3%	+51.6%	28.1%	-10.4%	+38.5%
2009	-1.2%	-7.5%	+6.3%	25.3%	17.3%	+8.1%
2010	-1.6%	6.9%	-8.5%	13.5%	25.0%	-11.5%
2011	6.4%	18.1%	-11.7%	9.7%	23.0%	-13.3%
2012	-2.3%	-11.6%	+9.3%	13.4%	2.7%	+10.8%
2013	-1.4%	-3.3%	+1.9%	30.6%	28.2%	+2.5%
2014	-2.8%	-1.8%	-1.0%	10.7%	11.9%	-1.2%
2015	3.7%	5.1%	-1.4%	6.0%	7.5%	-1.5%
2016	-3.5%	-11.2%	+7.7%	8.1%	-0.5%	+8.6%
2017	-7.0%	-7.5%	+0.5%	13.4%	12.8%	+0.6%
2018	19.9%	24.8%	-4.9%	15.8%	20.9%	-5.1%
2019	-4.8%	-6.8%	+2.0%	25.5%	22.4%	+3.0%
2020	45.0%	24.5%	+20.6%	80.7%	53.2%	+27.6%
2021	-2.5%	-18.6%	+16.1%	25.7%	5.1%	+20.6%
2022	-2.8%	-11.6%	+8.8%	-20.2%	-27.9%	+7.7%
2023	-0.6%	-5.2%	+4.7%	25.6%	19.8%	+5.9%
2024	-5.5%	-4.4%	-1.1%	18.3%	19.2%	-0.9%
2025	0.4%	11.3%	-10.9%	1.5%	12.7%	-11.2%



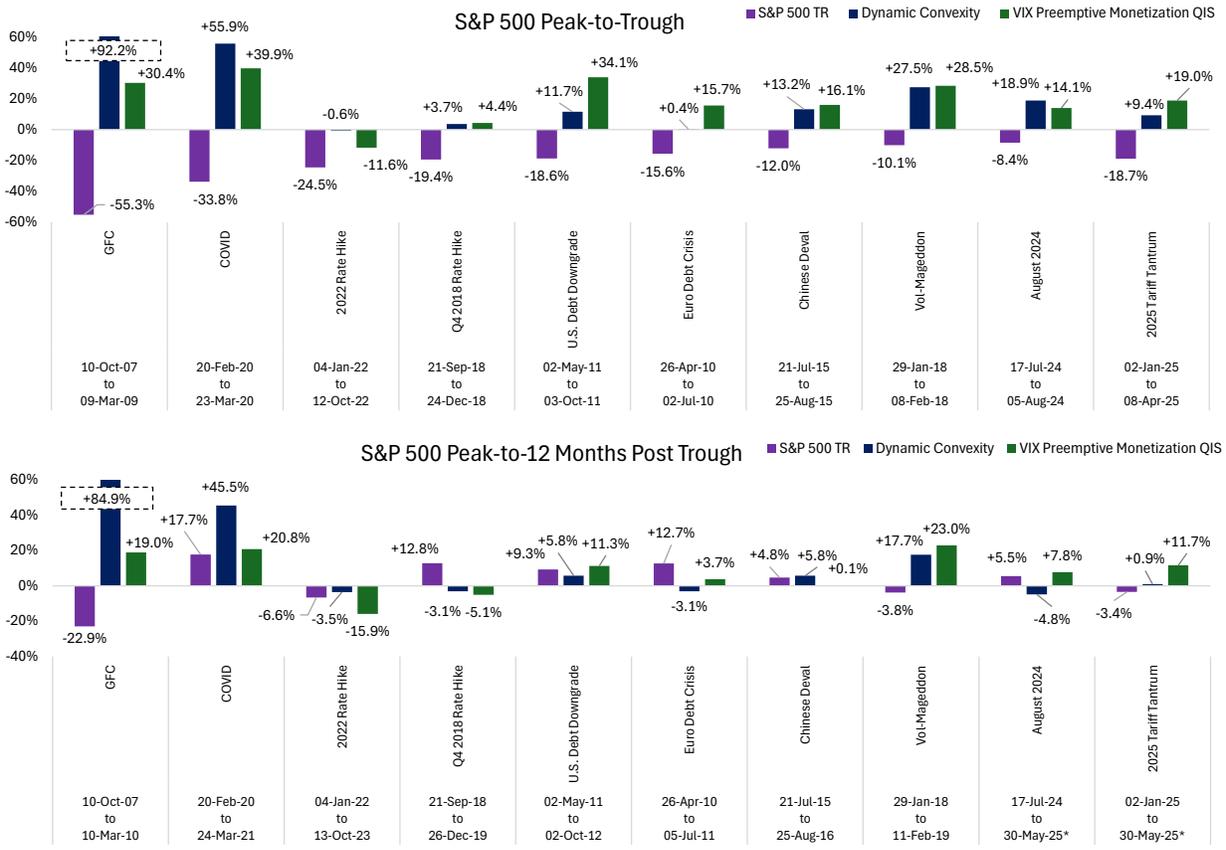
[For Exhibits 2 and 3] Source: One River, Bloomberg. S&P 500 uses the S&P 500 Total Return Index. The performance for Dynamic Convexity went live in April 2015, with returns prior to that being a hypothetical backtest. The most recent month returns are estimated, and subject to change. The return simulation uses live returns when possible, and backtested returns when necessary. Past performance does not guarantee future results. QIS Source: Morgan Stanley QIS – “VIX Call Spread Replication”, based on a modified MSCBDLV Index. This material was not prepared by the Morgan Stanley Research Department. This does not constitute advice.

<sup>1</sup> Morgan Stanley QIS – “VIX Call Spread Replication” (based on a modified MSCBDLV Index) is a QIS strategy that seeks to replicate a VIX Call spreads over relatively short-term tenors with dynamic delta-hedging.

Through the lens of One River’s objectives, our strategy’s ability to amplify equity returns when rebalanced alongside equity beta (**Exhibit 3**) is the most important long-term outcome that we seek to achieve. Through this evaluation criteria, the objective becomes quite simple: use defensive, convex returns to compound better than equities over the long-term. However, the VPM approach in this comparison saw much better short-term return outcomes versus Dynamic Convexity in the 2010 Euro Debt Crisis, 2011 U.S. Debt Downgrade, 2018 Short VIX ETF Unwind (i.e., Vol-mageddon), August 2024 Yen Unwind, and April 2025 Tariff Tantrum – each of which were fast crashes or market corrections that recovered quickly.

**Exhibit 4** below further studies S&P 500 drawdown case studies for both approaches, which highlights the tradeoffs during the most impactful periods. This analysis, which mirrors the analysis we conducted in our recent [piece](#) for trend, separates each drawdown over two evaluation windows: market peak-to-trough, and market peak-to-12 months after the trough. The first demonstrates the drawdown window, or the convexity generation relative to the peak drawdown for each event, and the second examines the “roundtrip”, or monetization of the hedge versus the market recovery in the subsequent year following each drawdown.

**Exhibit 4: One River Dynamic Convexity and VIX Preemptive Monetization QIS**  
**Largest S&P 500 Drawdowns by Event**  
 January 2007 – May 2025



Source: One River, Bloomberg. \*These events haven't yet seen 12 months post trough, so they conclude at the most recent month end. S&P 500 uses the S&P 500 Total Return Index. The performance for Dynamic Convexity went live in April 2015, with returns prior to that being a hypothetical backtest. The most recent month returns are estimated, and subject to change. The return simulation uses live returns when possible, and backtested returns when necessary. Past performance does not guarantee future results. QIS Source: Morgan Stanley QIS – "VIX Call Spread Replication", based on a modified MSCBDLVS Index. This material was not prepared by the Morgan Stanley Research Department. This does not constitute advice.

It is worthwhile visiting the mentality of a Dynamic Convexity investor in the wake of each drawdown studied above. During the GFC, Dynamic Convexity process provided much stronger convexity generation – but the subsequent Euro Debt Crisis and U.S. Debt Downgrade periods in 2010 and 2011 went better for the VPM approach. After the 2011 debt downgrade, one may have seriously called into question whether the nature of

drawdowns had changed to be structurally different: perhaps crises were now faster and short-lived in a post-GFC world.

Subsequently, the August 2015 Chinese Devaluation would have favored Dynamic Convexity, while February 2018's Vol-Mageddon would have marginally favored faster monetization. Q4 2018 Rate Hike would have been disappointing for both approaches, but markets bounced hard in 2019 as if to affirm there was nothing to be concerned about macroeconomically. The COVID crash saw both approaches respond, but stronger retention of gains for Dynamic Convexity as can be seen in the lower chart that includes the post-COVID period bleed. Then most recently, August 2024 and April 2025 events both clearly favored the preemptive monetization approach, mirroring what was observed in the Euro Debt Crisis and U.S. Debt downgrade in the wake of the GFC.

The question remains for the period beginning today: have markets structurally changed such that only preemptive monetizing strategies have the chance to monetize convex returns? Or perhaps it is the case that because such approaches have worked well in recent years, the market is less likely to swing back to a rapid recovery in the middle of mounting panic. We remain open-minded to changing market dynamics and have added some additional intra-period monetization parameters and gamma-focused substrategies to our process. Importantly, however, these changes do not dilute our expected convexity generation in a Market Reset or Major Crisis type of decline. Through our research process, we will continue to embrace our alpha-oriented approach to better monetize intra-crisis returns without diminishing our desired total portfolio impact.

Our long-term clients have benefitted greatly from our adherence to the mission of building the best long-term portfolio solutions to complement their existing allocations. Striking the right balance between innovation and adaptation while incorporating long-term evidence that supports such decision-making is how we calibrate our mentality when researching markets and our approach. Dynamic Convexity is our best expression of that mission, and as such we expect this strategy to grow and evolve alongside our firm and clients.

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Prior to December 2019, the Dynamic Convexity Strategy returns reflect the actual returns of the strategy within a One River managed SPC (Segregated Portfolio Company). Returns for the SPC are available upon request. Prior to December 2019, operating expenses are excluded for the net return calculation. The Dynamic Convexity SP caps expenses at 25 bps if AUM is above USD 250 million.

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