

Product update

CAOS Tops Bonds as Duration Stumbles

August 11, 2025

Summary

- CAOS records yet another steady month in its books, outperforming the bond cat. average
- How CAOS complements bonds: duration plays vs. risk-management focus
- Staying diversified with CAOS can potentially help investors when correlations go to one

[Please visit the CAOS fund page](#) for current holdings, standardized returns, and prospectus.

Recap

The Alpha Architect Tail Risk ETF (CAOS) returned 0.05% (NAV)/-0.05% (MKT) through July 31, 2025. Comparatively, US Aggregate Bonds¹ (“Bonds”), lost -0.23% at NAV.

In short, **CAOS behaved as one would expect.**

In times of market volatility decay, one would expect long-volatility assets to bleed. It’s a straightforward mathematical argument—you short something that wins most of the time, and you will likely lose over the long term. This makes tail-hedging assets a particularly hard pill to swallow and a tough hold in investor portfolios. **CAOS seeks to provide tail-hedging payoffs while avoiding the bleed typically associated with these assets.** In that vein, it’s no surprise July was mostly uneventful, with U.S. large blend² gaining 1.98%, while CAOS inched 0.05% higher at NAV.

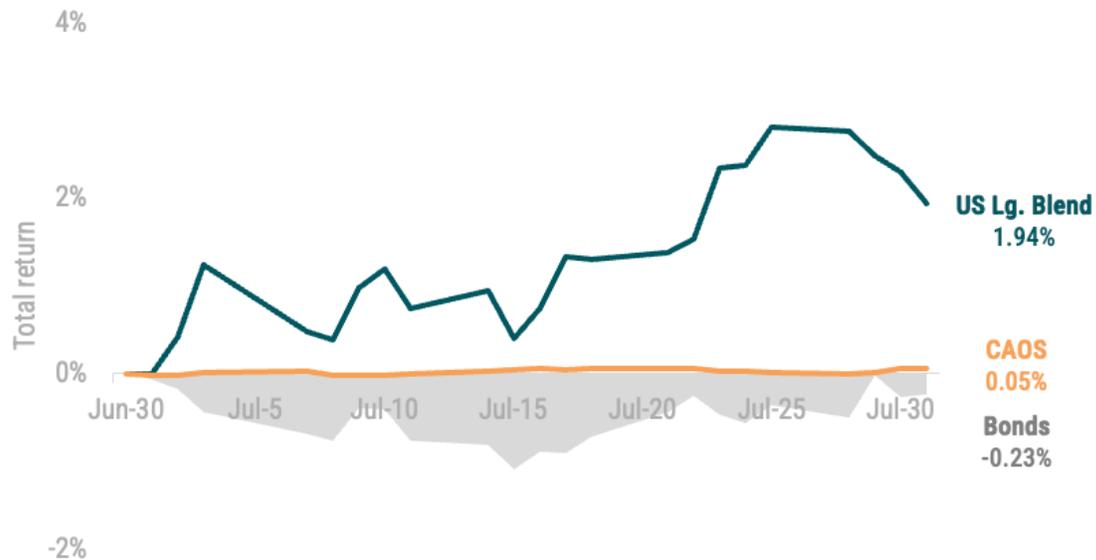
(see chart in the next page)

¹ US Aggregate Bonds (“Bonds”) represented by the average returns at NAV of the 50 biggest open-ended funds (ETFs and mutual funds) in the Intermediate Core Bond category, based on assets under management. Intermediate-term core bond funds invest primarily in investment-grade US fixed-income issues, including government, corporate, and securitized debt, and hold less than 5% in below-investment-grade exposures. Categories determined by YCharts.

² US Large Blend is represented by ETFs that are fairly representative of the overall U.S. stock market in size, growth rates, and price. Stocks in the top 70% of the capitalization of the U.S. equity market are defined as large cap. The blend style is assigned to portfolios where neither growth nor value characteristics predominate.

CAOS bests bonds in July

Total return at NAV | CAOS | Bonds | US Large Blend



Source: YCharts, Alpha Architect. 7/1/2025 – 7/31/2025. Daily returns. **PAST PERFORMANCE DOES NOT GUARANTEE FUTURE RESULTS.** Investing involves risk, including the potential loss of principal. Returns are derived from sources believed to be accurate but are not guaranteed.

To review, CAOS seeks to deliver these returns by packaging three complementary strategies:

- **Deep out-of-the-money puts** to potentially pop when fast crashes catch markets off guard,
- **Box spreads** to target slow and steady gains regardless of market conditions, and
- **Short put spreads** that seek risk-controlled gains when markets run up.

This dynamic structure can allow CAOS to adapt effectively across a range of market conditions.

Because these strategies behave so differently, in most market conditions either the deep-put component or the short-put-spread component will likely detract from the fund's return. In favorable markets, **long puts tend to bleed; but if volatility rears its ugly head, these puts can surge in value.**

The reverse is true for short put spreads. **When markets climb, put spreads are likely to expire out-of-the-money, benefiting CAOS as the seller.** But in a sharp market decline, losses can build until reaching the protection of the spread's long leg.

July was a net loser for the long puts and a net winner for the put spread component. In other words, all is relatively in order in the equity market.

But what is going on in the bond world?

Bonds watch rates, CAOS watches risk

Since the 2022 bond bear market, bonds have yet to find their footing. Left and right, macro prognosticators and market charlatans have tried to call the great bond comeback. Yet no true catalyst has emerged.

From a technical perspective, rates have “kangarooed” up and down with no clear breakthrough for the better part of three years. July’s hotter-than-expected CPI print (2.7% vs. 2.6%) broke the rate trend yet again, sending fixed income prices lower. For bonds, these moves translate directly into price swings due to their duration exposure. For CAOS, the impact is far more muted, as returns are driven primarily by the options market rather than rate shifts. This highlights a key difference between the two: **bonds are a duration play, while CAOS is a risk-management product³** that seeks to extract returns directly from the options market—positioning to potentially benefit when chaos strikes.

While the two sometimes move in tandem during market turmoil (since rates often drop when volatility spikes) the real nuance in returns emerges when volatility is mild and fixed income returns diverge from those generated by CAOS’s structure.

So how has this structure played out in 2025?

CAOS Returns | YTD

Total return at NAV | CAOS | Bonds | US Large Blend



³ Of course, it’s important to mention that CAOS does in fact have some exposure to duration, but it’s much more limited. The box spread portion, in particular, can respond to moves linked to the Fed Funds rate. While present, these moves are typically muted, as the box spreads generally target maturities of just one to three months. One would seldom call this a duration play.

Source: YCharts, Alpha Architect. 1/1/2025 – 7/31/2025. Daily returns. **PAST PERFORMANCE DOES NOT GUARANTEE FUTURE RESULTS.** Investing involves risk, including the potential loss of principal. Returns are derived from sources believed to be accurate but are not guaranteed.

Year-to-date, the bond category average has returned 3.86% compared with CAOS's 1.55%. CAOS has shown a strong negative correlation against U.S. large blend (-0.77 for CAOS vs. 0.01 for bonds), with most of that inverse relationship stemming from the April tariff spike.

Overall, while duration hasn't been the top performer in recent markets, it has held its own. CAOS returns, meanwhile, have been steadier and shown lower correlation to stocks.

So which should you choose? In our [model portfolios](#), we suggest investors avoid picking favorites—choose both. Duration can play an important role in a diversified portfolio, while tail-risk management can source risk-off returns directly from the options market, making CAOS a compelling diversifier when correlations converge toward one.

Seeking the best of both worlds

Because ad-hoc, emotion-driven timing can be detrimental to long-term results, **holding both bonds and CAOS may help reduce the urge to make reactive shifts.** When fear or greed tempts investors to adjust allocations suddenly—such as moving out of bonds after a rate spike or adding protection only after a sell-off—this combination seeks to provide exposure to both rate-sensitive and option-based strategies. This approach can help maintain diversification whether rates trend lower or markets experience periods of heightened volatility.

And diversification isn't just about mixing asset classes—**it's about mixing the sources of returns.**

Most strategies are built on the same levers—equity beta, thematic, credit—and tend to move together when it matters least. CAOS starts from a different place entirely, drawing its return drivers from the options market rather than traditional asset price trends. The result is an exposure that can sit alongside a variety of portfolio strategies without piling into the same risks, potentially offering a form of diversification that's becoming harder to source in today's markets.

In fact, CAOS has historically provided a distinct source of diversification relative to core stocks, bonds, and even managed futures.

(see historical daily correlations in the next page)

	CAOS	U.S. Large Blend	Bonds	Mgd. Futures
CAOS	1.00			
U.S. Large Blend	0.14	1.00		
Bonds	0.03	-0.03	1.00	
Mgd. Futures	-0.04	0.08	-0.18	1.00

Source: YCharts, Alpha Architect. 9/1/2013 – 7/31/2025. Daily correlations at NAV. **PAST PERFORMANCE DOES NOT GUARANTEE FUTURE RESULTS.** Investing involves risk, including the potential loss of principal. Returns are derived from sources believed to be accurate but are not guaranteed.

Investing will always have its share of surprises, and there’s no way to predict every twist. CAOS aims to give you something that seeks to deliver when it matters most—so you can face those sudden market plunges with a little more confidence and sleep better at night.

For questions about CAOS, please contact Jack Vogel, PhD, Alpha Architect’s co-CIO, CFO, and portfolio manager. He can be reached at jack@alphaarchitect.com.

Additional CAOS Resources

CAOS Return Drivers. Retail-approved piece that explains what may drive the fund’s returns.

CAOS Investment Case. Learn more about the Fund’s process. Includes options pay-off diagrams, a look under the hood during 2020, and potential portfolio use cases alongside other assets such as bonds, managed futures, and more.

Model portfolio. See how CAOS fits into the context of a broader model portfolio.

IMPORTANT INFORMATION

Investors should carefully consider the investment objectives, risk, charges, and expenses of the funds. Investment return and principal value of an investment will fluctuate so that an investor’s shares, when sold or redeemed, may be worth more or less than their original cost. Current performance may be lower or higher than the performance quoted. Obtain the fund’s prospectus and/or performance data current to the most recent end by calling (215) 882-9983 or by visiting www.AlphaArchitect.com/funds. The prospectus should be read carefully before investing.

PRINCIPAL RISKS

Selling or Writing Options. Writing option contracts can result in losses that exceed the seller's initial investment and may lead to additional turnover and higher tax liability. The risk involved in writing a call option is that there could be an increase in the market value of the underlying or reference asset. An underlying or reference asset may be an index, equity security, or ETF. If this occurs, the call option could be exercised and the underlying asset would then be sold at a lower price than its current market value. In the case of cash settled call options such as SPX options, the call seller would be required to purchase the call option at a price that is higher than the original sales price for such call option. Similarly, while writing call options can reduce the risk of owning the underlying asset, such a strategy limits the opportunity to profit from an increase in the market value of the underlying asset in exchange for up-front cash at the time of selling the call option. The risk involved in writing a put option is that there could be a decrease in the market value of the underlying asset. If this occurs, the put option could be exercised and the underlying asset would then be sold at a higher price than its current market value. In the case of cash settled put options, the put seller would be required to purchase the put option at a price that is higher than the original sales price for such put option.

Buying or Purchasing Options Risk. If a call or put option is not sold when it has remaining value and if the market price of the underlying asset, in the case of a call option, remains less than or equal to the exercise price, or, in the case of a put option, remains equal to or greater than the exercise price, the buyer will lose its entire investment in the call or put option. Since many factors influence the value of an option, including the price of the underlying asset, the exercise price, the time to expiration, the interest rate, and the dividend rate of the underlying asset, the buyer's success in implementing an option buying strategy may depend on an ability to predict movements in the prices of individual assets, fluctuations in markets, and movements in interest rates. There is no assurance that a liquid market will exist when the buyer seeks to close out any option position. When an option is purchased to hedge against price movements in an underlying asset, the price of the option may move more or less than the price of the underlying asset.

Box Spread Risk. A Box Spread is a synthetic bond created by combining different options trades that have offsetting spreads (e.g., purchases and sales on the same underlying instrument, such as an index or an ETF, but with different strike prices). If one or more of these individual option positions are modified or closed separately prior to the option contract's expiration, then the Box Spread may no longer effectively eliminate risk tied to the underlying asset's price movement. Furthermore, the Box Spread's value is derived in the market and is in part, based on the time until the options comprising the Box Spread expire and the prevailing market interest rates. If the Fund (or an underlying ETF) sells a Box Spread prior to its expiration, then the Fund may incur a loss. The Fund's ability to profit from Box Spreads is dependent on the availability and willingness of other market participants to sell Box Spreads to the Fund (or the underlying ETF) at competitive prices.

FLEX Options Risk. FLEX Options are exchange-traded options contracts with uniquely customizable terms like exercise price, style, and expiration date. Due to their customization and potentially unique terms, FLEX Options may be less liquid than other securities, such as standard exchange listed options. In less liquid markets for the FLEX Options, the Fund may have difficulty closing out certain FLEX Options positions at desired times and prices. The value of FLEX Options will be affected by, among others, changes in the underlying share or equity index price, changes in actual and implied interest rates, changes in the actual and implied volatility of the underlying shares or equity index and the remaining time to until the FLEX Options expire. The value of the FLEX Options will be determined based upon market quotations or using other recognized pricing methods. During periods of reduced market liquidity or in the absence of readily available market quotations for the holdings of the Fund, the ability of the Fund to value the FLEX Options becomes more difficult and the judgment of Arin Risk Advisors (employing the fair value procedures adopted by the Board of Trustees of the Trust) may play a greater role in the valuation of the Fund's holdings due to reduced availability of reliable objective pricing data.

Derivatives Risk. A derivative is any financial instrument whose value is based on, and determined by, another asset, rate or index (i.e., stock options, futures contracts, caps, floors, etc.). When the Fund obtains exposure to derivatives it will be exposed to the risks of those derivatives. The use of derivatives for non-hedging purposes may be considered to carry more risk than other types of investments. Unfavorable changes in the value of the underlying asset, rate or

index may cause sudden losses. Changes in the value of a derivative may not correlate perfectly with the underlying asset, rate or index, a the Fund could lose more than the principal amount invested. Derivative instruments are subject to a number of risks including counterparty, liquidity, interest rate, market, credit and management risks, as well as the risk of improper valuation.

Counterparty Risk. Counterparty risk is the risk that a counterparty to a financial instrument held by the Fund may become insolvent or otherwise fail to perform its obligations, and the Fund may obtain no or limited recovery of its investment, and any recovery may be significantly delayed. Exchange listed options, including FLEX Options, are issued and guaranteed for settlement by the Options Clearing Corporation (“OCC”). The Fund’s investments are at risk that the OCC will be unable or unwilling to perform its obligations under the option contract terms. In the unlikely event that the OCC becomes insolvent or is otherwise unable to meet its settlement obligations, the Fund could suffer significant losses.

Note on category average methodology

Constituents of a given category are determined by YCharts. As of 4/30/2024, the calculation method used to determine the category average’s returns changed to account for potentially different inception dates. Previously, a straight average of constituent funds’ total return net asset value (NAV) was used to determine the category’s average total return NAV; the percent change of the category average NAV was then used to calculate returns. As of 4/30/2024, total returns for the category are now found using a straight average of the total NAV return (percent change) for a given frequency (daily, weekly, monthly, etc.). There may be instances where the straight average of the constituent funds’ NAV returns may be higher or lower than the straight average of the total NAV return. As of 4/30/2024, all category average returns are calculated using the straight average of the constituent funds’ total NAV return for a given frequency.

Category average constituent selection criteria

Unless otherwise noted, the given category is represented by the 50 biggest funds based on assets under management (AUM). The AUM figure is point-in-time and is not retroactively applied to constituent funds. In the event fewer than 50 funds are available in a given category, all funds are used in to calculate returns. Funds that may have been open for investment over the given period but are no longer active are not included. The number of constituent funds in a given category average may affect represented returns. In the event of multiple share classes, the share class with the highest AUM is referenced. Category returns are a straight average of the total return of the constituent funds over the given period.

Wherever possible, we reference the 50 biggest funds by AUM to provide what we believe to be a reasonable sample of the most popular strategies that includes a mix of passive and active approaches. The highest AUM funds tend to have more established track records, providing what we believe to be a reasonable basis for returns. We reference all funds in the category in the event there are fewer than 50 funds open for investment.

Limited universe

The information presented regarding peer ETFs may be based on a limited universe of comparable funds that we believe are relevant to the strategy, investment style, and asset class of this ETF. This comparison is not exhaustive and may exclude other funds that also offer similar exposures or strategies. Investors are encouraged to conduct their own research and consider other products in the marketplace that may provide comparable investment objectives or characteristics. Past performance is no guarantee of future results, and differences in fees, structures, or market conditions may lead to different outcomes between peer funds and this ETF. Investors should consider factors such as risk tolerance, fees, liquidity, and investment goals before making any investment decisions based on peer comparisons. This disclosure is not an endorsement of any peer fund, nor should it be interpreted as financial advice.



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