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**alpha architect**

# **ALPHA ARCHITECT Tail Risk ETF (CAOS)**

We Empower Investors Through Education | Affordable Alpha

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# CAOS Seeks To Solve the Problems Tied to Other Tail Risk Investments



## **Tail Risk Hedge**

The strategy seeks to earn positive returns during significant market drawdowns.




## **Low Return Drag**

The strategy manages cash collateral and other option strategies to minimize return drag.



## **Tax-Efficient**

The strategy seeks to be tax-efficient and minimize distributions.



# Key due diligence questions to consider for tail risk strategies:

## **Did they actually hedge?**

These investments are often marketed as hedging a portfolio, but what did the historical performance show?

## **How bad is the return drag?**

Many tail risk funds strictly buy deep out of the money puts, which may drag performance down over time.

## **What are the potential tax implications?**

Tail risk funds are often delivered outside of the ETF structure, hindering their potential tax efficiency.

A deep out-of-the-money put option is a type of financial contract where the underlying asset's price is significantly higher than the option's strike price.



# Out-of-the-Money Puts May Provide Tail Risk Protection

## What is a deep OTM put?

A deep out-of-the-money put option is a type of financial contract where the **underlying asset's price is significantly higher** than the option's strike price.

In other words, the put option has a strike price that is **far below** (“**deep**”) the current market price of the underlying asset.


## Trade-offs to consider:

### Potential benefits:

+ IF the underlying asset price *falls significantly*, THEN the OTM put options may produce a high positive absolute return

### Potential risks:

- IF the underlying asset price rises or volatility falls, THEN the OTM put options expire and *generate no return*



**Did the strategy  
actually hedge?**

# Potential CAOS Return Profiles

## Stock Market Return Profile

## Potential CAOS Return Profile



Stocks experience sharp drawdown of **-10%** or worse in 60 days or less



May produce strong positive absolute returns



Stocks experience a prolonged drawdown of **-10%** or more over 60 days or more



May produce flat to negative returns



Stocks experience a shallow drawdown of less than **-10%**



May produce flat to negative returns



Stocks experience a bull run



May produce flat to positive returns thanks to collateral yield

For illustrative purposes only.

Portfolio holdings are subject to change. Investing involves risk, including the loss of principal. **Collateral Yield** refers to the return or profit earned on collateral assets that are pledged as security for a loan or financial transaction. **Drawdown** is a drop from peak to bottom in the value of a portfolio before a new peak is achieved in a given period. **Bull run** is an idiomatic expression to describe a period when investors generally have a positive outlook on the market, leading to increased buying activity and upward price movements.

# CAOS Expense Ratio and Standardized Performance

ETF Name	ETF Ticker	Gross Expense Ratio	Net Expense Ratio	ETF Inception Date	Return Type	3 Month	1 Year	3 Year	5 Year	10 Year	Since Inception
Tail Risk ETF	CAOS	0.70%	0.63%	8/14/2013	NAV	0.58%	1.43%	3.69%	8.94%	0.09%	303%
					MKT	0.51%	1.38%	3.64%	8.90%	0.08%	302%

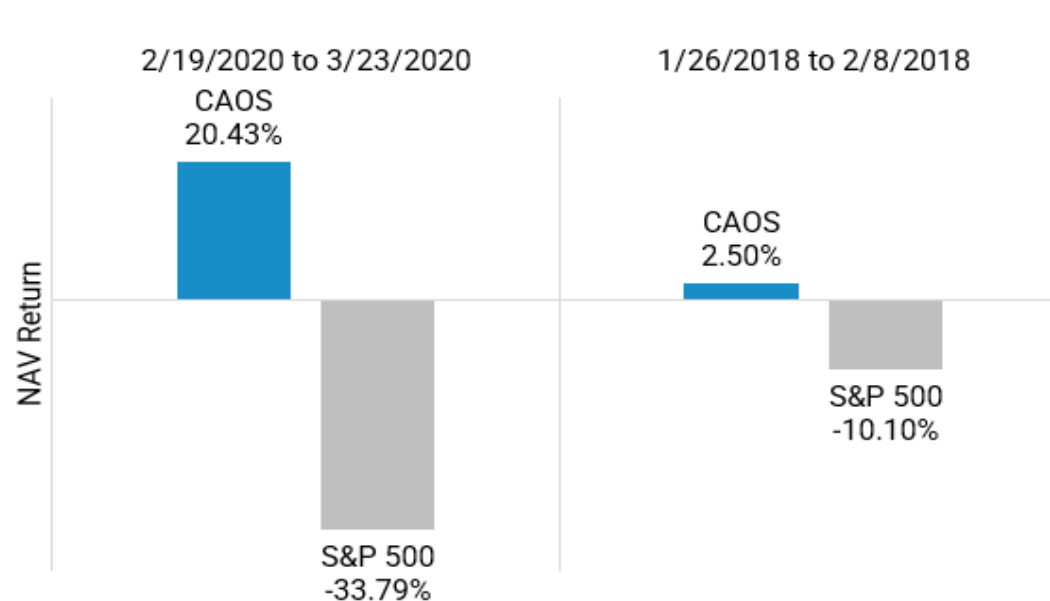
**Quarterly returns, as of 12/31/2023.** Returns are average annualized total returns, except those for periods of less than one year, which are cumulative. The performance data quoted represents past performance and does not guarantee future results. Investment return and principal value of an investment 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day. The net expense ratio is applicable to investors. The Adviser has contractually agreed to waive receipt of its management fees and/or assume expenses of the Fund, including any acquired fund fees or expenses ("AFFE") related to the Fund's investment in the Alpha Architect 1-3 Month Box ETF so that the total annual operating expenses of the Fund (excluding payments under the Fund's Rule 12b-1 distribution and service plan (if any), brokerage expenses, taxes (including tax-related services), interest (including borrowing costs), litigation expense (including class action-related services) and other non-routine or extraordinary expenses) do not exceed 0.63% of the Fund's average daily net assets. Any AFFE associated with Fund investments in any other acquired funds are not included in the fee waiver. This agreement may only be changed or terminated by a vote of the holders of a majority of the Fund's outstanding voting securities.



# CAOS NAV Performance During Market Drawdowns Larger than -10%

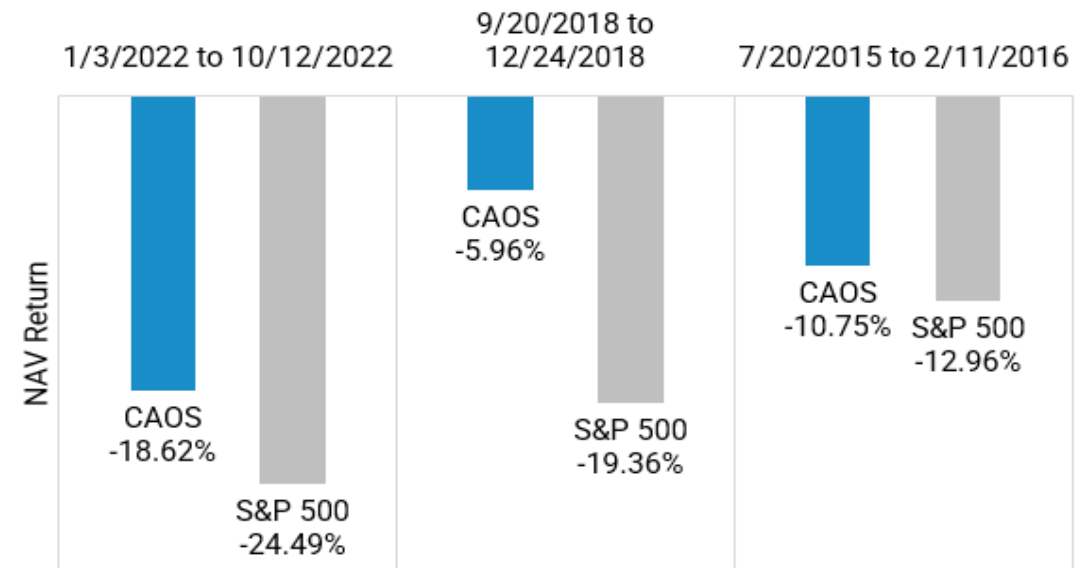
## Positive Absolute Performance

### Fast Drawdown ( $\geq 10\%$ loss in $< 60$ days)



## Strong Relative Performance

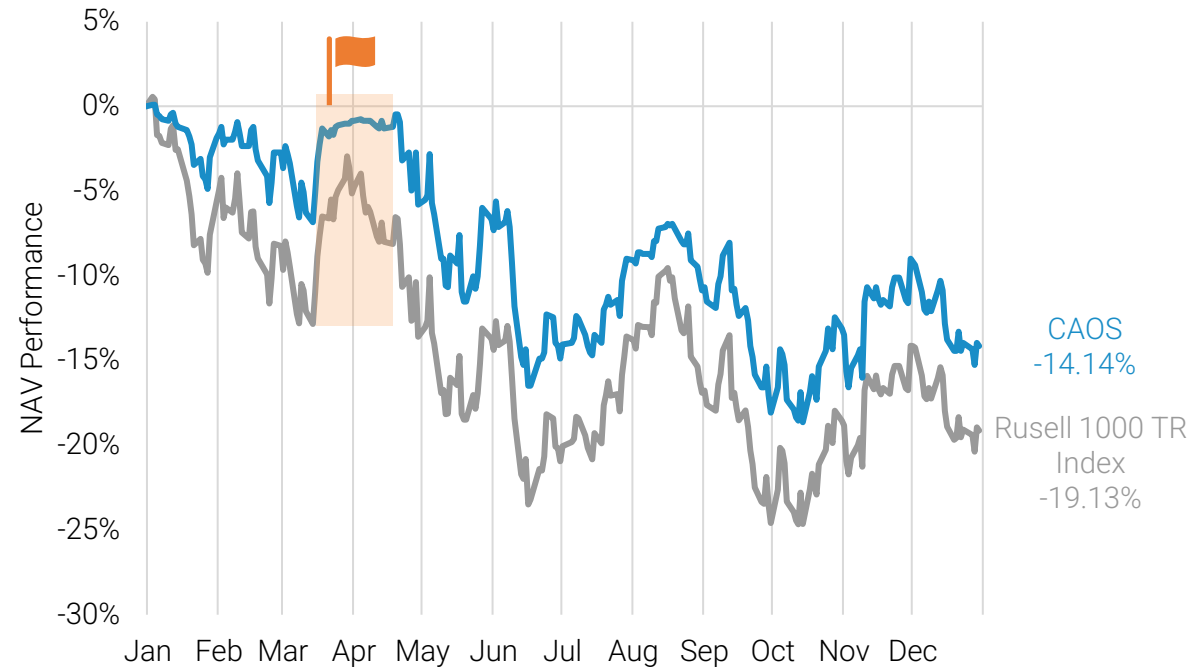
### Slow Drawdown ( $\geq 10\%$ loss in $> 60$ days)



Source: Factset. The NAV performance data quoted represents past performance and does not guarantee future results. 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day. Fast drawdown refers to drawdown periods that occur within 60 days; Slow drawdown periods are 61 days or more. S&P 500 Index measures the performance of the 500 largest companies that are in the United States. These companies can vary across various sectors.



# 2022 – Slow Drawdown



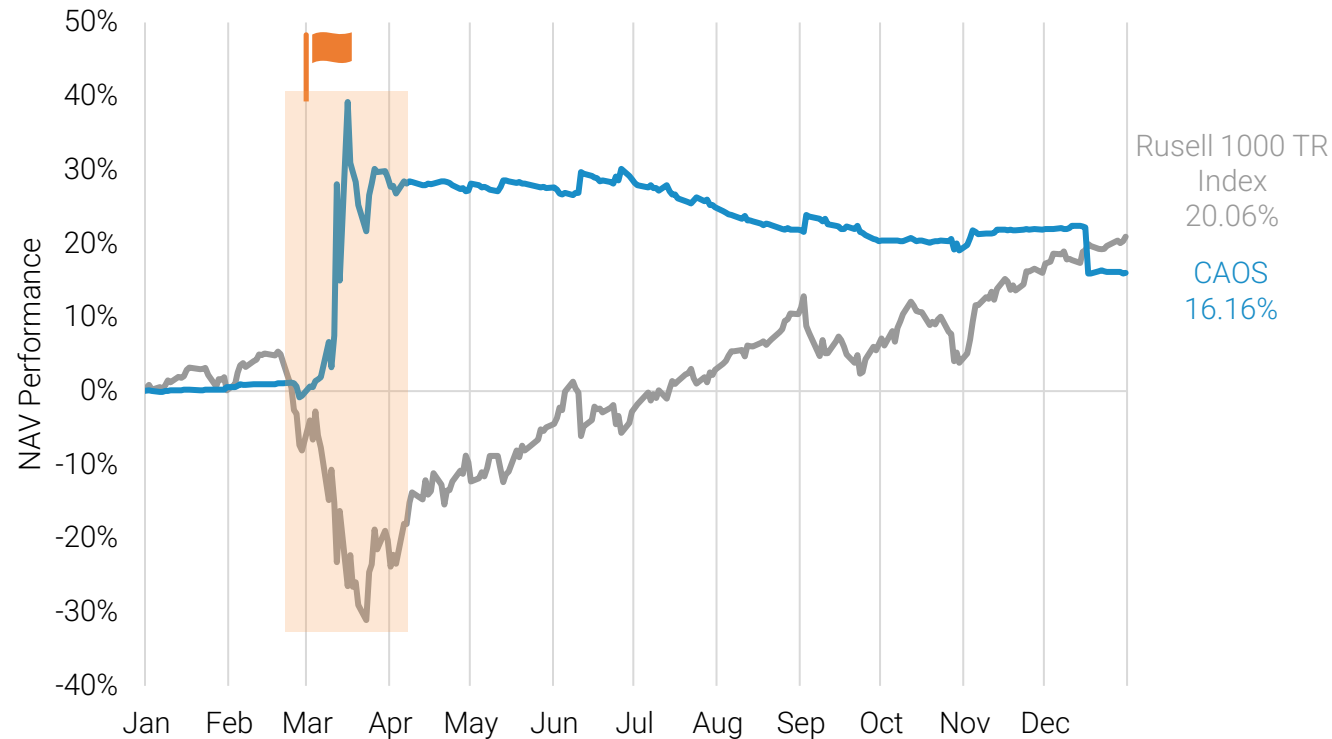
## 2022 – Slow Drawdown

Stocks experienced a prolonged drawdown in 2022 on the back of geopolitical tensions and higher interest rates rising to meet resurgent inflation.

CAOS never benefited from a large spike in volatility often caused by a swift and extreme drawdown, which mean the protection benefits were muted.

Source: Alpha Architect, Arin Risk Advisors. Daily returns. 1/1/2022 – 12/31/2022. Russell 1000 Total Return Index tracks the 1000 largest US companies by market cap. The NAV performance data quoted represents past performance and does not guarantee future results. 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day.

# 2020 – Fast Drawdown



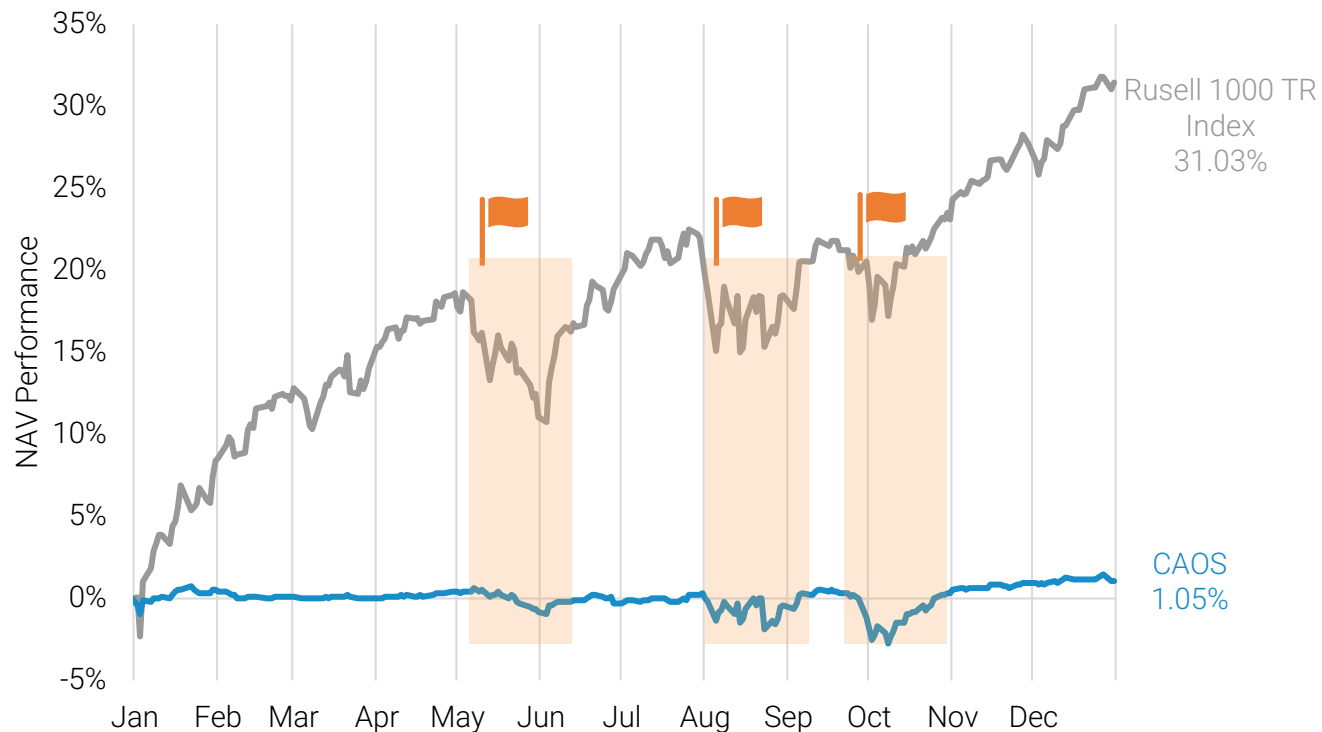
## 2020 – Fast Drawdown

Stocks experienced a sharp drawdown in March 2020 in response to the onset of the COVID-19 pandemic. Stocks then staged a rapid recovery.

CAOS produced high positive absolute returns in response to the sudden fall in stocks. The returns aligned with the expected payoff profile typical of deep OTM puts.

Source: Alpha Architect, Arin Risk Advisors. Daily returns. 1/1/2020 – 12/31/2020. Russell 1000 Total Return Index tracks the 1000 largest US companies by market cap. The NAV performance data quoted represents past performance and does not guarantee future results. 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day.

# 2019 – Normal Environment



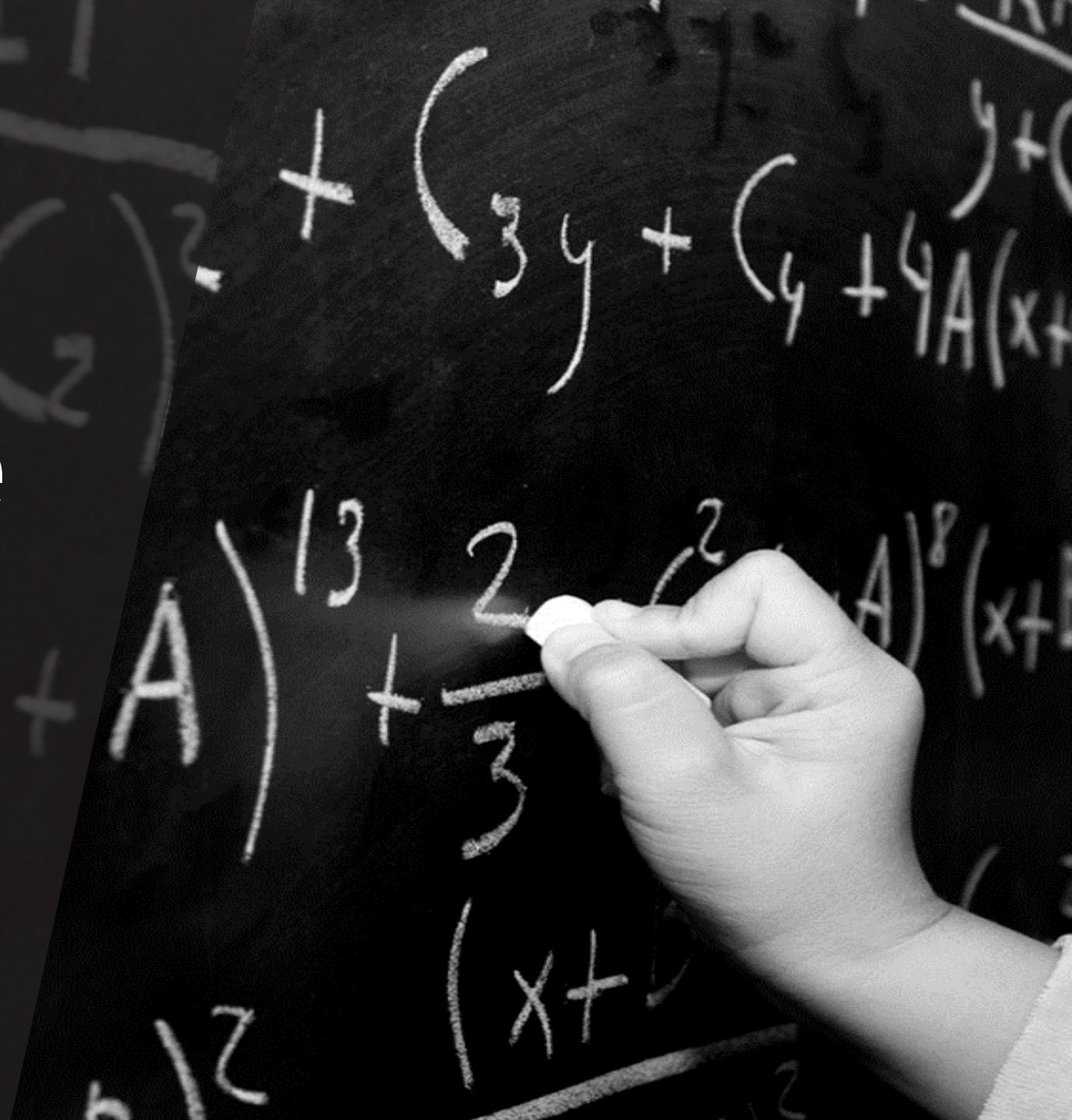
## 2019 – Normal Market

Stocks experienced a bumpy but positive 2019, punctuated by three shallow drawdowns.

CAOS spent 2019 in a protected stance but was never able to monetize the deep out of the money put protection associated with swift and violent corrections.

Source: Alpha Architect, Arin Risk Advisors. Daily returns. 1/1/2019 – 12/31/2019. Russell 1000 Total Return Index tracks the 1000 largest US companies by market cap. The NAV performance data quoted represents past performance and does not guarantee future results. 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day.

**How bad is the  
return drag?**



# Tail Risk Strategies Often Suffer from Return Drag Issues

“Put options are the gold standard [for tail hedging] after all...I...demonstrate that the protection put options provide is often, well, *pathetic*.

-- Roni Israelov<sup>1</sup>

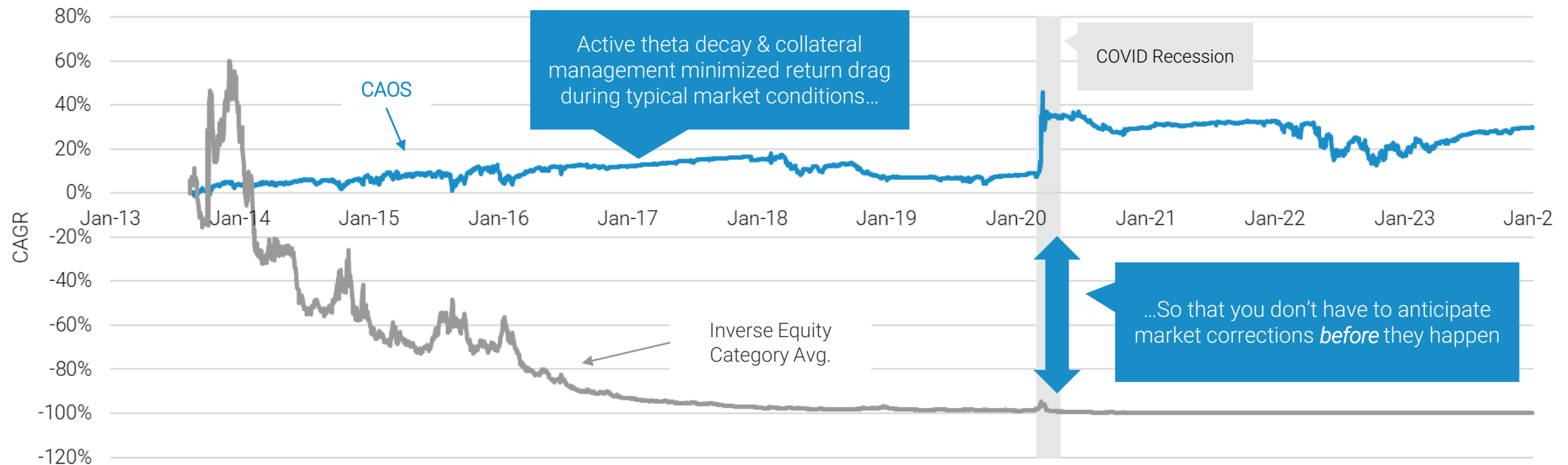
Problem	CAOS Return Drag Solution	Explanation
Collateral allocated to cash or cash equivalents offers a negative real yield	Active Collateral Management	The ETF seeks to buys box spreads with higher returns than equivalent duration* cash vehicles.
Time decay (“theta”) means the value of an option will decrease as the expiration date approaches.  In general, the closer an option is to expiration, the faster it will lose value.	Capture “time decay” via active spread strategies	The ETF actively manages option spread strategies that seek to minimize the cost of put protection.

<sup>1</sup>Pathetic Protection: The Elusive Benefits of Protective Puts. The Journal of Alternative Investments, 21(3), 6-33.

Duration refers to a measure of the sensitivity of the price of a fixed-income investment (such as bonds) to changes in interest rates. It is a key concept used in bond investing to assess the potential impact of interest rate movements on the value of a bond or a portfolio of bonds.



# CAOS may act as a strategic allocation – unlike other tail risk strategies



Daily total return; 8/14/2013 – 6/30/2023.

Source: Alpha Architect, YCharts.

**CAGR** stands for compounded annualized growth rate, which represents the rate at which an investment would have grown if it had grown at the same rate every year and the profits were reinvested at the end of each year. **Inverse Equity category** is represented by strategies that seek to generate returns equal to an inverse fixed multiple of short-term returns of an equity index. The NAV performance data quoted represents past performance and does not guarantee future results. 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 higher or lower than the performance quoted. For performance data current to the most recent month end, please call 215.882.9983 or visit [www.alphaarchitect.com/funds](http://www.alphaarchitect.com/funds). Market price is the price at which shares in the ETF can be bought or sold on the exchanges during trading hours, while the net asset value (NAV) represents the value of each share's portion of the fund's underlying assets and cash at the end of the trading day.



Let's talk  
next steps.

## See a model portfolio

Visit [advisors.alphaarchitect.com](https://advisors.alphaarchitect.com) to review and download model portfolios sized by investor risk tolerance.

## Attend a webinar

Our portfolio management team hosts LIVE webinars each month for our investors. It's a great opportunity to get an update on the funds and get any questions answered. Register for upcoming webinars by visiting [advisors.alphaarchitect.com/events](https://advisors.alphaarchitect.com/events).

## Schedule a consultation

Whether it's a few follow-up questions or looking for a deep dive, a conversation is often the fastest way to get answers. [Find a time to speak to our team.](#)



# IMPORTANT INFORMATION - DISCLOSURES

Investors should consider the investment objectives, risks, charges and expenses carefully before investing. For a prospectus or summary prospectus with this and other information about the Fund, please call (888) 123-4589 or visit our website at [etfsite.alphaarchitect.com/caos/](http://etfsite.alphaarchitect.com/caos/). Read the prospectus or summary prospectus carefully before investing.

Investments utilizing quantitative methods may perform differently than the market as a result of characteristics and data used and changes in trends. Investments in foreign securities involve political, economic and currency risks, greater volatility and differences in accounting methods. These risks are magnified in emerging markets.

## Risks:

Investing involves risk, including the possible loss of principal. Shares of any ETF are bought and sold at market price (not NAV) and may trade at a discount or premium to NAV. Shares are not individually redeemable from the Fund and may only be acquired or redeemed from the fund in creation units.

There is no assurance that the Fund will achieve its investment objective. An investor may lose money by investing in the Fund. An investment in the Fund is not a bank deposit and is not insured or guaranteed by the FDIC or any government agency.

**Selling or Writing Options Risk.** 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.

**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.

**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.

**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.

**Counterparty Risk.** Counterparty risk is the risk that a counterparty to a financial instrument held by the Fund or by a special purpose or structured vehicle invested in 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.

# IMPORTANT INFORMATION - DISCLOSURES

**Derivatives Risk.** Derivatives are instruments, such as futures contracts, whose value is derived from that of other assets, rates, or indices. The use of derivatives for non-hedging purposes may be considered to carry more risk than other types of investments.

**Commodity Risk.** Investing in physical commodities is speculative and can be extremely volatile.

**Real Estate Investment Risk.** Companies in the real estate sector include companies that invest in real estate, such as real estate investment trusts (REITs) and real estate management and development companies.

**Quantitative Security Selection Risk.** The Adviser uses a quantitative model, and its processes could be adversely affected if erroneous or outdated data is utilized. In addition, securities selected using a quantitative model could perform differently from the financial markets as a whole as a result of the characteristics used in the analysis, the weight placed on each characteristic and changes in the characteristic's historical trends.

**Non-Diversification Risk.** The Fund is non-diversified, meaning that it is permitted to invest a larger percentage of its assets in fewer issuers than diversified funds.

The Fund is distributed by Quasar Distributors, LLC. The Fund's investment advisor is Empowered Funds, LLC which is doing business as EA Advisers.

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