

# An Overview of the Quadratic Interest Rate Volatility and Inflation Hedge ETF (NYSE Ticker: IVOL)

## About Quadratic Capital Management

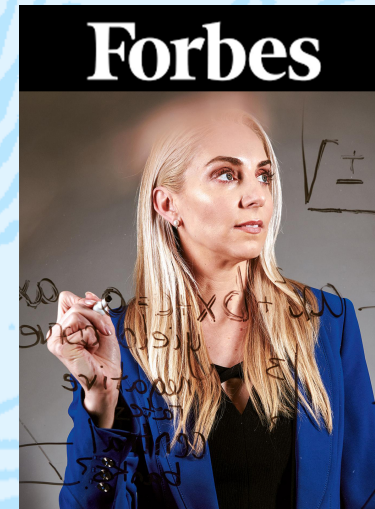
Quadratic Capital Management is an innovative asset management firm founded in 2013 by Nancy Davis. The firm has utilized its significant expertise in the interest rate volatility and options markets to construct IVOL.

## Why IVOL?

Many portfolios limit their exposure to stocks and bonds. IVOL accesses the U.S. Government and OTC rates markets. The OTC rates market is nearly five times larger than the stock market.

The IVOL ETF provides diversification to an often inaccessible part of the market that is very different from stock and bond portfolios.

[Investor.Relations@QuadraticLLC.com](mailto:Investor.Relations@QuadraticLLC.com)



## The Quadratic Team and IVOL Partners

The Quadratic Team				
<p><b>Nancy Davis</b> CIO &amp; Managing Partner 21 Years of Experience</p> <ul style="list-style-type: none"> <li>• Head of Credit, Derivatives and OTC Trading for Goldman Sachs Prop Desk</li> <li>• Highbridge Capital and AllianceBernstein</li> </ul>	<p><b>Glenn Christal</b> COO &amp; CCO 32 Years of Experience</p> <ul style="list-style-type: none"> <li>• Treasurer of Tudor, 15 years</li> <li>• COO of Millennium Partners</li> </ul>	<p><b>Henrique Rocha</b> Market Strategist 10 Years of Experience</p> <ul style="list-style-type: none"> <li>• Goldman Sachs Rates and FX Strategist</li> <li>• Investment experience at firms in both Brazil and the U.S.</li> </ul>	<p><b>Brooke Farley</b> Business Development 30 Years of Experience</p> <ul style="list-style-type: none"> <li>• Former McKinsey Research consultant</li> <li>• MIA from Columbia University School of International Affairs</li> </ul>	
IVOL Partners				
<p><b>Fund Administration</b></p>	<p><b>Listing Exchange</b></p>	<p><b>ETF Auditors</b></p>	<p><b>Custodian</b></p>	<p><b>ETF Platform</b></p>

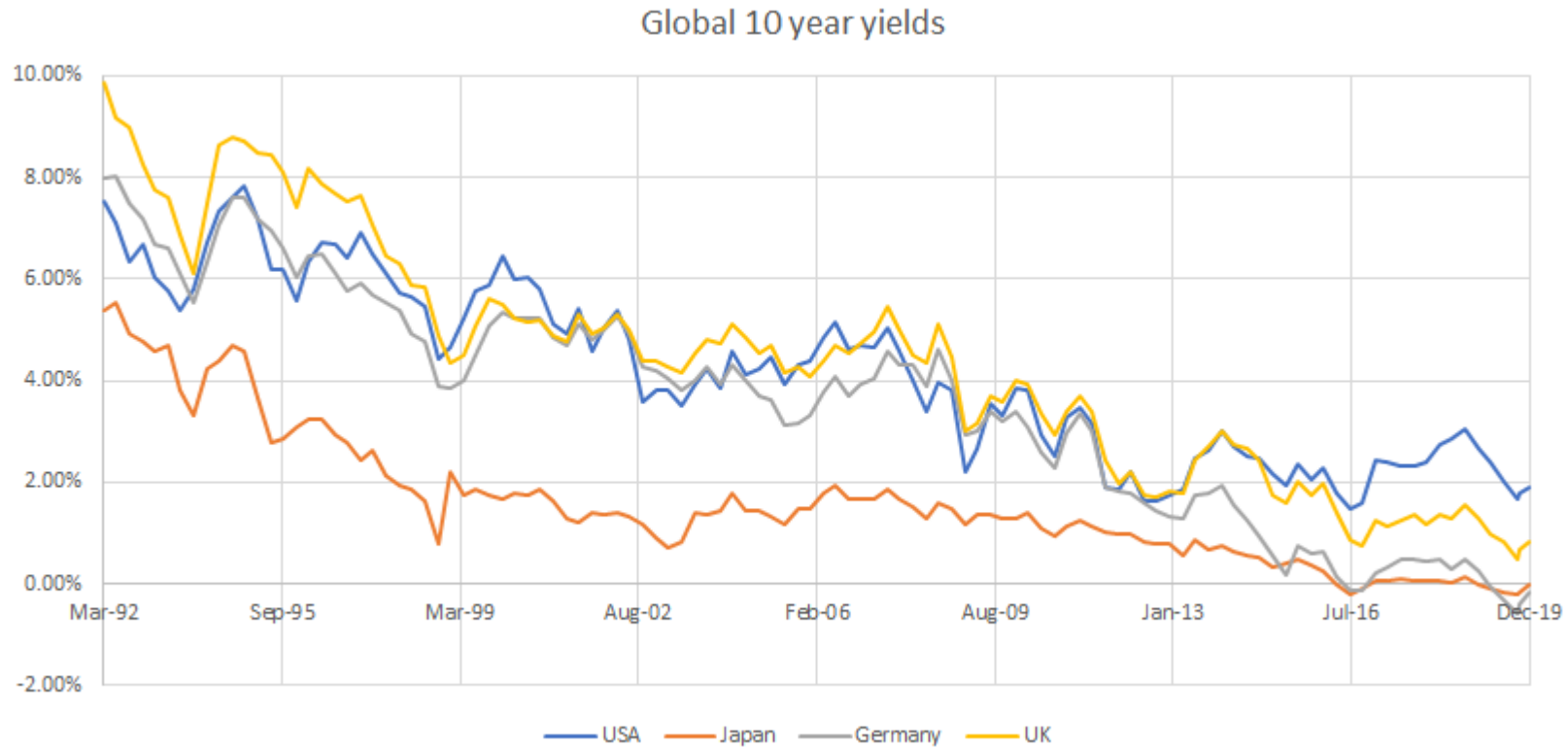
## The IVOL Ecosystem

	NAV-Based Creates	Market Orders	
Investor	Large Institutions	RIA's	Individuals
Execution	Authorized Participants	Individual Brokerage Account	
Liquidity	Function of the value of the underlying asset that backs the ETF	Function of the value of ETF shares traded	
Shares	Flexible supply - shares can be "created" or "redeemed" to offset changes in demand	Trading the ETF shares that currently exist	

Authorized Participants & Market Makers		
 BAML	 BTIG	 Cantor
 Citadel	 Citi	 Credit Suisse
 Deutsche Bank	 Goldman Sachs	 Jane Street
 Jefferies	 J.P. Morgan	 RBC
 Société	 Street One Financial	 UBS
 Virtu	 Wallach Beth	 C&C Trading

## Dilemmas currently faced by investors

- Investors need income yet rates are very low globally

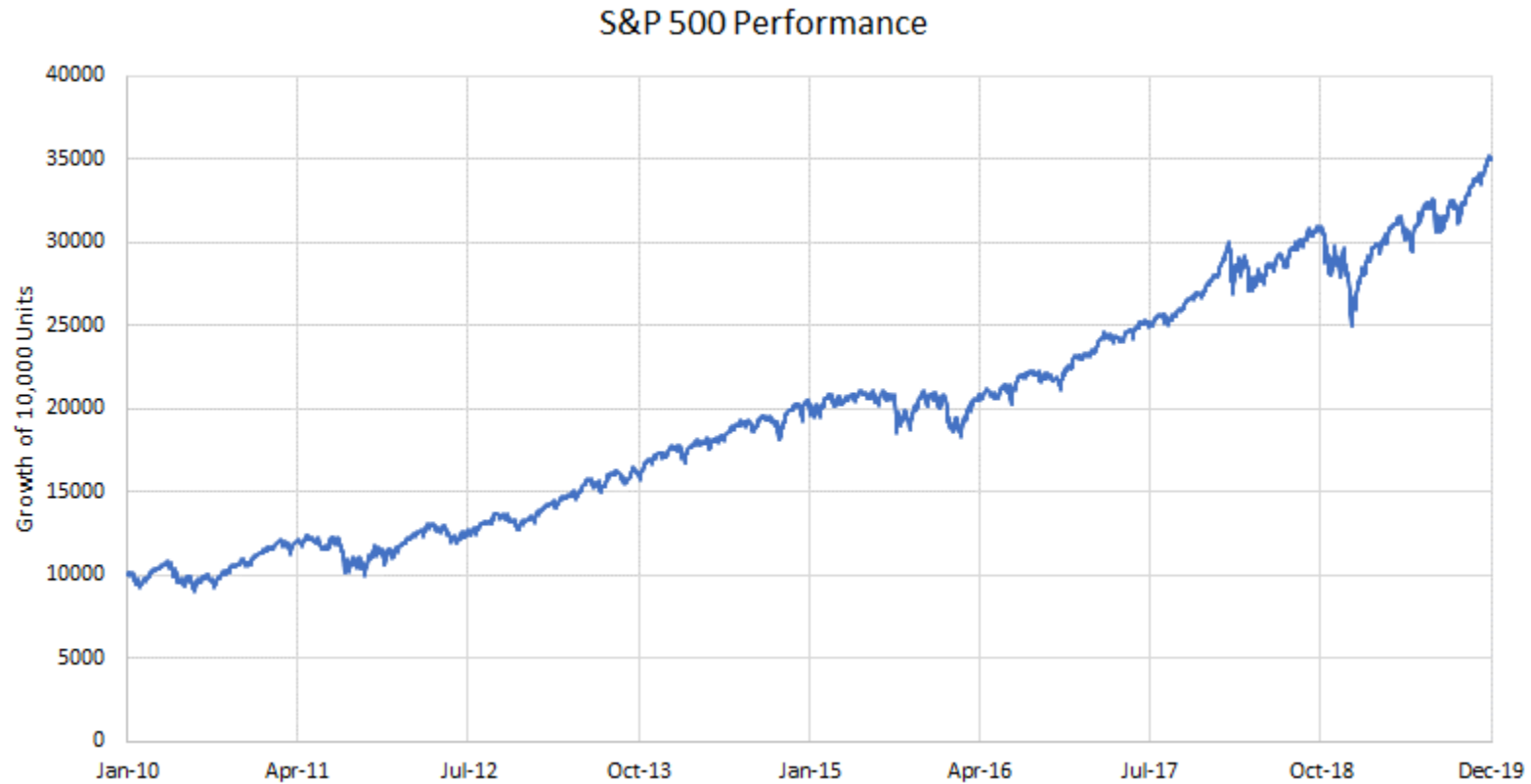


Data from Bloomberg as of 12/31/2019.

Global 10 year yields: These time series represent the interest rate paid in the prevailing 10-year bond of each country at a certain point in time. Yield is the annual return that an investor would receive by holding each of the bonds to maturity

## Dilemmas currently faced by investors

- Equity valuations are at, or approaching, all-time highs



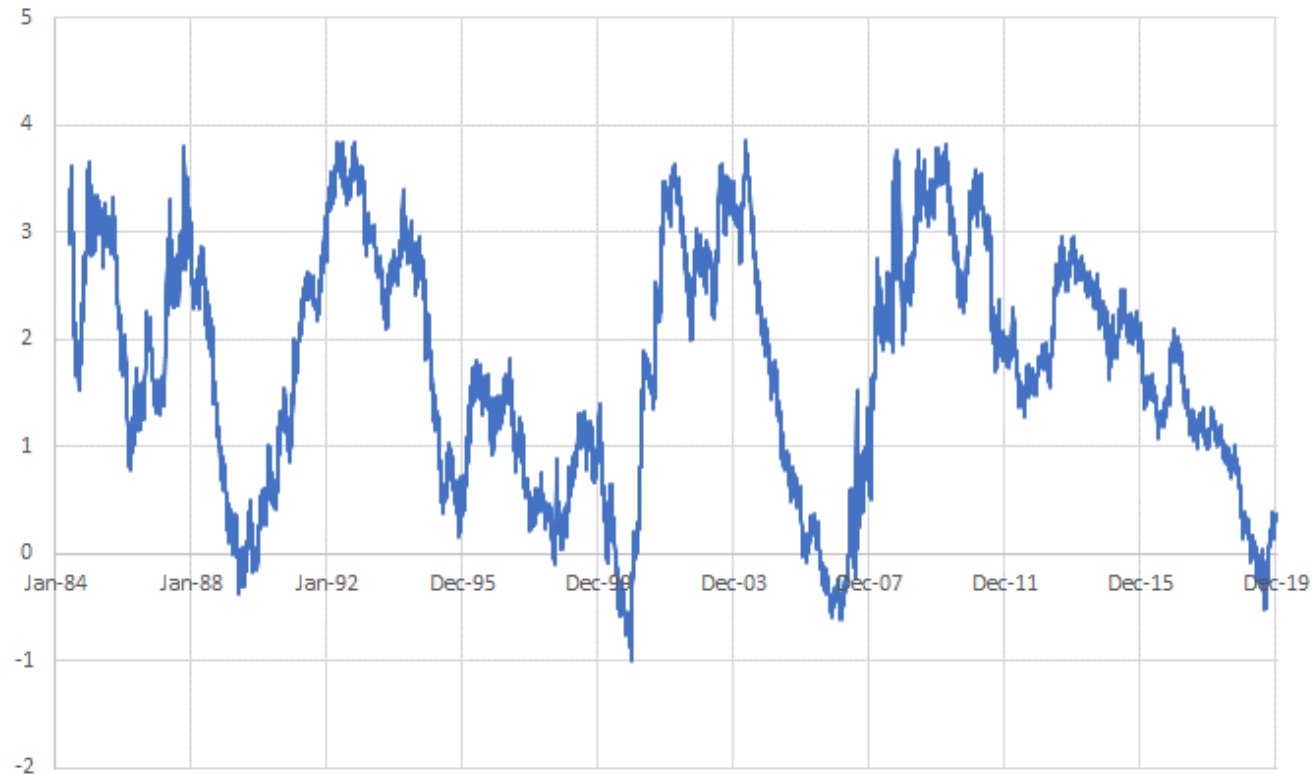
Data from Bloomberg as of 12/31/2019

Index returns are for illustrative performance only and do not represent actual Fund performance. Index returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results.

## Dilemmas currently faced by investors

- The yield curve is very close to flat, which is not normal.
- At the same time, market downturns, rising volatility, and increased interest rates threaten the value of investment portfolios and real estate holdings.
- The spread between the yield on the 10y Treasury bond and the 3m T-bill is flat- meaning an investor is paid almost the same to own the 3-month bill versus the 10 year bond.

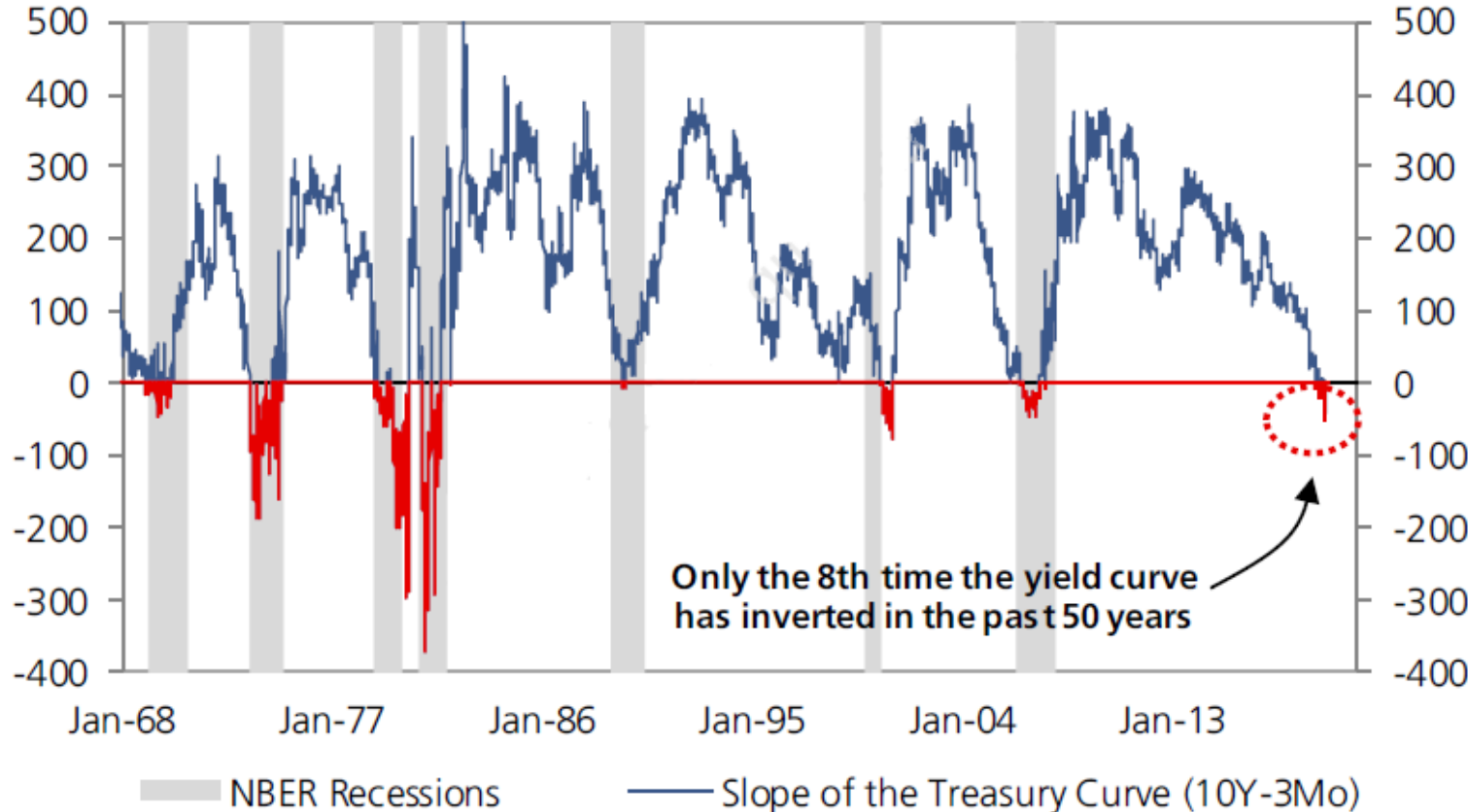
10y Treasury yield minus 3m t-bill yields



Chairman Powell said  
*“inflation expectations are the most important driver of actual inflation”*. (WSJ, 2019)

# The yield curve – recession indicator

Almost every inversion of the curve in the last 50 years has resulted in a recession shortly thereafter



Data from UBS and Quadratic Capital calculations as of 09/04/2019.

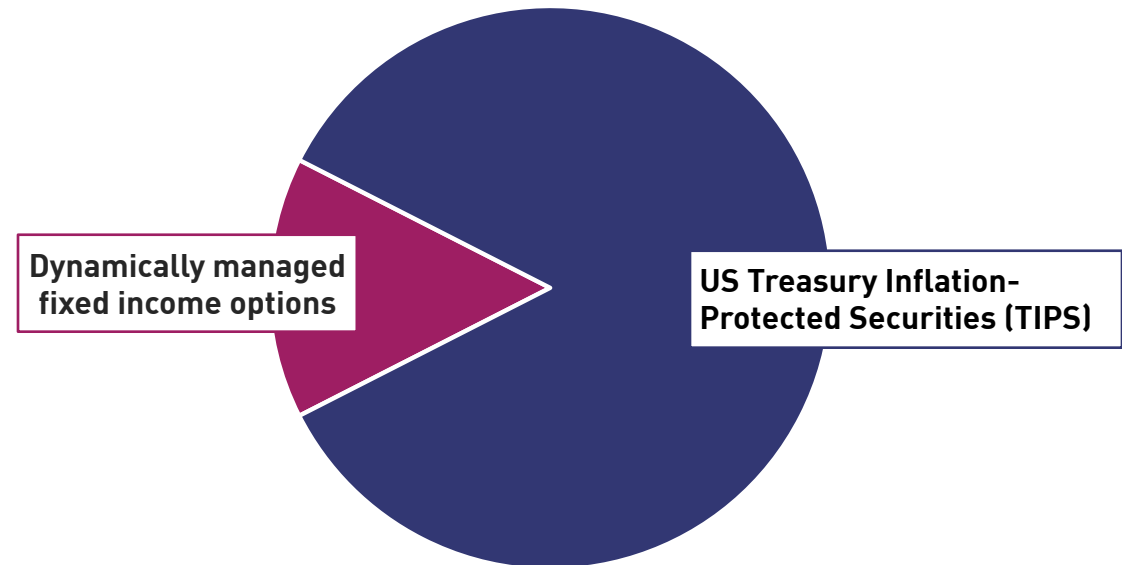
## Investment Strategy:

IVOL is a fixed income ETF that seeks to hedge relative interest rate movements, whether these movements arise from falling short-term interest rates or rising long-term interest rates, and to benefit from market stress when fixed income volatility increases, while providing the potential for enhanced inflation-protected income.

What makes IVOL unique is that it is long interest rate volatility via its access to the OTC fixed income options market. No other active or passive ETF has provided its investors access to this market before. This access is the key to IVOL's many applications and allows it to potentially benefit from normalization of the yield curve while seeking to provide inflation-protection.

## IVOL Portfolio Composition

- Dynamically managed fixed income options
- US Treasury Inflation-Protected Securities (TIPS)





## Potential Scenario Analysis

Factors that Impact IVOL	Rising	Falling
TIPS Bond Price	✓	✗
Volatility	✓	✗
Expectations for Rate Cuts	✓	✗
Long Dated Yields	✓	✗

✓/✗ indicates the potential effect these scenarios may have on IVOL. With ✓ indicating a potential positive effect and ✗ indicating a potential negative effect

## IVOL: Low Correlations to Common Asset Classes

IVOL Correlation To:	DOW	S&P 500	MSCI EM	HY Credit	VIX
Overall	-0.08	-0.07	0.04	-0.07	0.06
On Down Days	-0.34	-0.27	0.02	-0.31	-0.01
On Up Days	0.07	-0.01	0.05	0.18	0.13

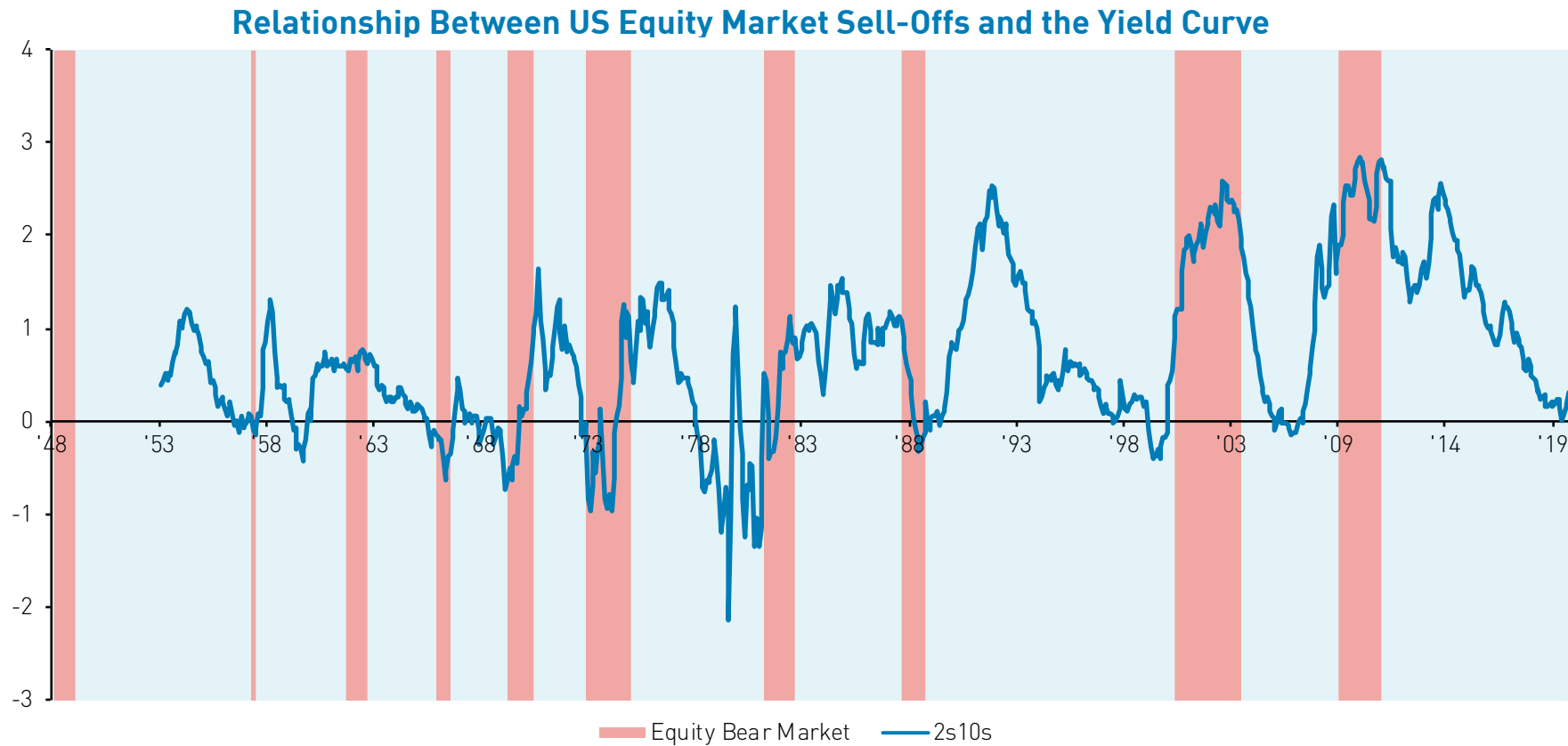
Source: Bloomberg from IVOL inception through 12/31/19

***More importantly, the correlation data tells us that, since inception IVOL has done well on days that these stock and bond markets fell.***

1. See end of deck for index definitions
2. Index returns are for illustrative purposes only and do not represent actual Fund performance. Index returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index. Past performance does not guarantee future results. For actual fund performance visit our website [www.kfafunds.com](http://www.kfafunds.com).

## Attractive “Risk Off” hedge for equities

- The IVOL portfolio has the ability to benefit from equity market shocks. How can a portfolio which invests in interest rate options potentially benefit equity holders?
- As the chart below shows, equity market sell-offs have historically been associated with a steepening of the yield curve. By holding interest rate options that are expected to pay off when the yield curve steepens, IVOL may also help hedge investors against equity market sell-offs.

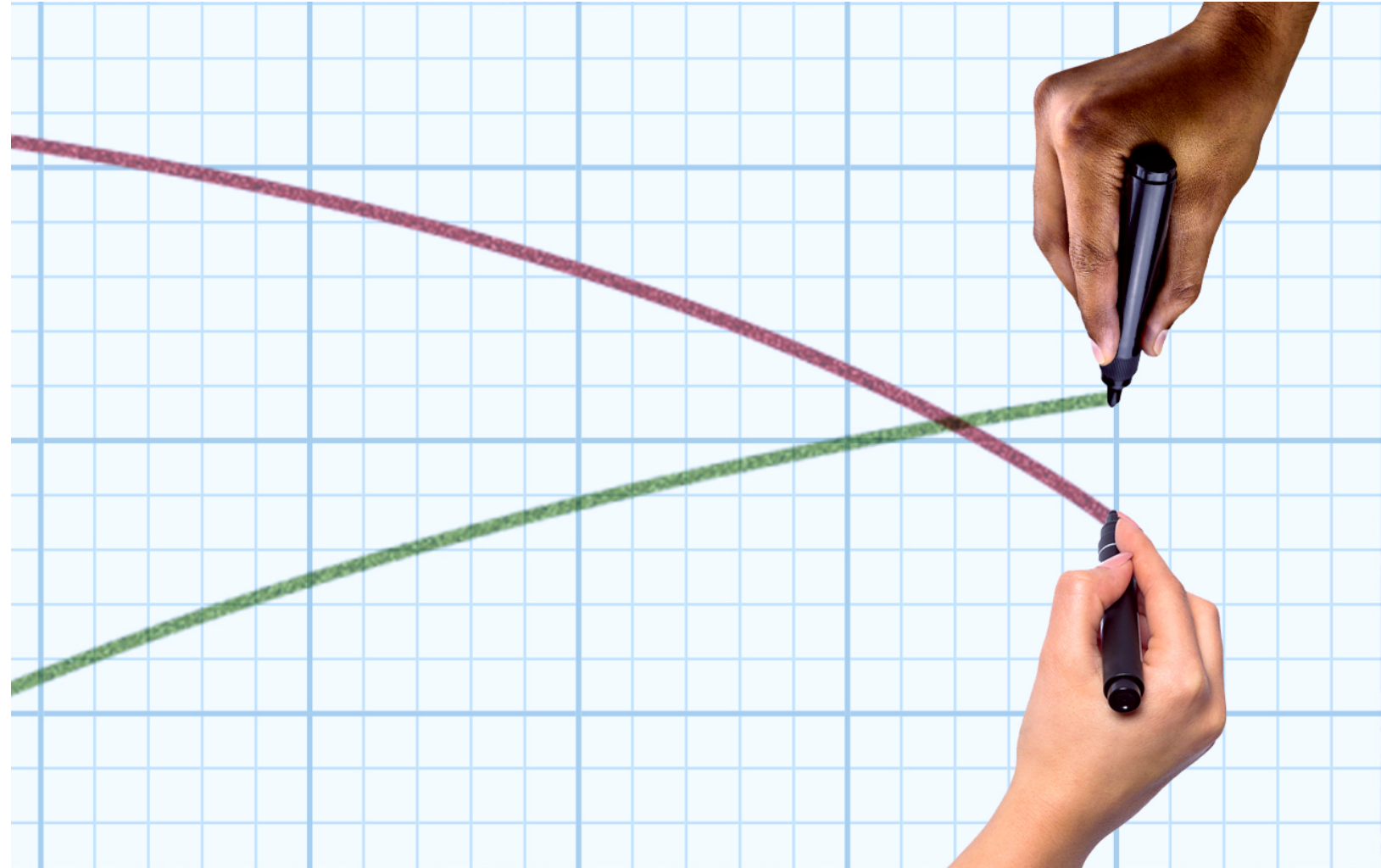


Investors	Concern / Potential Solution - How IVOL can be used in an Investor's Portfolio
<b>Passive Fixed Income</b>	<ul style="list-style-type: none"> <li>Barclays Agg has no TIPS, 28% of the index is short volatility and 32% has credit spread risk.<sup>1</sup></li> <li>IVOL holds TIPS, and is long-volatility, which can act as a completion portfolio and potential diversifier to a fixed income portfolio centered on the Barclays Agg (Bloomberg Barclays US Aggregate Bond Index).</li> </ul>
<b>Min Vol / Low Vol Stocks</b>	<ul style="list-style-type: none"> <li>Used to be “defensive” and to generate yield with the hope they will have less equity risk than the broader market.</li> <li>Investors may be overpaying for “safe” stocks. These stocks have nothing to do with owning “volatility.”</li> <li>IVOL has the ability to be defensive because it owns volatility and US Treasuries and potentially benefits from a steepening of the yield curve, which historically has been associated with equity market declines.</li> </ul>
<b>TIPS / Short Duration</b>	<ul style="list-style-type: none"> <li>IVOL may potentially enhance or replace TIPS or short-duration fixed income in portfolios. Here is why:</li> <li>TIPS are set using the Consumer Price Index (CPI), which only represents today’s inflation level.</li> <li>IVOL own TIPS, but we enhance our TIPS with options on the yield curve. These options are similar to options on inflation expectations, because the yield curve is largely a result of inflation expectations.</li> </ul>
<b>Floating Rate Notes (FRN)</b>	<ul style="list-style-type: none"> <li>Owned to profit from higher yields, FRNs have credit risk and almost no sensitivity to interest rates.</li> <li>IVOL has the potential to appreciate when the interest rate curve steepens and long dated inflation expectations move higher, giving investors a similar benefit to the one they are expecting from their FRN without the credit risk.</li> </ul>
<b>Equities</b>	<ul style="list-style-type: none"> <li>IVOL may help hedge equity investors during market sell-offs should rate cut expectations cause the yield curve to steepen and volatility increases.</li> <li>IVOL may act as a market hedge since volatility has historically increased during large equity sell-offs.</li> </ul>
<b>Real Estate</b>	<ul style="list-style-type: none"> <li>Higher rates increase the all-in cost of buying a home or other property and can therefore depress demand.</li> <li>Increased rate volatility can reduce mortgage lenders’ appetite for new loans.</li> <li>IVOL may accomplish objectives of diversification, higher yield, better inflation protection, liquidity and easy to own.</li> </ul>

1. As of 12/31/2019

## The IVOL Solution

- Should the yield curve return to its normal shape, IVOL has the potential to make money from this movement. This can happen from an increase in the relative difference in longer versus short term interest rates when:
  - Short term rates decrease (fed cuts)
  - Long term rates increase – higher inflation expectations
- IVOL provides potential for true portfolio diversification while also the potential for delivering inflation-protected income
- IVOL also allows investors potentially to profit from market stress generally as volatility increases.



## The Quadratic Interest Rate Volatility and Inflation Hedge ETF

### Investment Strategy:

IVOL is a fixed income ETF that seeks to hedge relative interest rate movements, whether these movements arise from falling short-term interest rates or rising long-term interest rates, and to benefit from market stress when fixed income volatility increases, while providing the potential for enhanced inflation-protected income.

What makes IVOL unique is that it is long interest rate volatility via its access to the OTC fixed income options market. It is the first ETF to provide its investors access to this market. This access is the key to IVOL's many applications and allows it to potentially benefit from normalization of the yield curve while seeking to provide inflation-protection.

### IVOL Performance History as of 12/31/2019

	Cumulative %			Average Annualized %		
	3 Mo	6 Mo	Since Inception	1 Yr	3 Yr	Since Inception
Fund NAV	1.00%	-0.33%	3.14%	-	-	3.14%
Closing Price	0.55%	-0.69%	3.17%	-	-	3.17%
Index*	0.79%	2.15%	4.51%	-	-	4.51%

**The performance data quoted represents past performance. Past performance does not guarantee future results. The 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 and current performance may be lower or higher than the performance quoted. For performance data current to the most recent month end, please visit [www.kraneshares.com](http://www.kraneshares.com)**

**Index returns are for illustrative purposes only. Index performance returns do not reflect any management fees, transaction costs or expenses. Indexes are unmanaged and one cannot invest directly in an index.**

**\*Index is the Bloomberg Barclays US Treasury Inflation Linked Bond Index (Series L). Please note that although this index is provided for comparative purposes, the fund's strategy is benchmark agnostic.**

### Key Fund Information

Ticker	IVOL
Fund Name	Quadratic Interest Rate Volatility and Inflation Hedge ETF
Primary Exchange	NYSE
Total Annual Fund Operating Expense	1.04%
Total Annual Fund Operating Expenses After Fee Waiver*	0.99%
Inception Date	5/13/2019
Distribution Frequency	Monthly

**\*Adviser has contractually agreed to waive fees until August 1, 2020.**

## IVOL's Risk Profile

Investing involves risk, including possible loss of principal. There can be no assurance that the Fund will achieve its stated objectives, including its objective of eliminating the curve or inflation risk. Investors should take note of the following risks before investing in IVOL. A more thorough discussion of options investing can found on the Options Clearing Corporation's website. A link to which can be found in the Important Notes section of this presentation.

- **A Flattening Yield Curve Risk:** IVOL may underperform or lose money when the U.S. interest rate curve flattens or inverts, perhaps significantly. When this occurs the Fund's investments may generally underperform a portfolio consisting solely of U.S. government bonds
- **Leverage Risk:** IVOL's OTC options may give rise to a form of leverage, which may magnify the Fund's potential for gain and the risk of loss. The Fund may potentially be more volatile than a portfolio of traditional investments such as stocks or bonds.
- **Liquidity & Counterparty Risk:** OTC options may be subject to liquidity risk and counterparty risk.
- **Credit & Non-Curve Interest Rate Risk:** IVOL's use OTC options is not intended to mitigate credit risk, or non-curve interest rate risk. Additionally, IVOL invests in debt securities, which typically decrease in value when interest rates rise.
- **Considered Speculative:** Investing in options tied to the shape of the swap curve is considered speculative and can be extremely volatile.
- **The Fund is non-diversified.**

## Index Definitions

- **The Dow Jones Industrial Average** (“Dow”) is an index that tracks 30 large, publicly-owned companies trading on the New York Stock Exchange and the NASDAQ.
- **The S&P 500**, (“S&P”), is a stock market index that measures the stock performance of 500 large companies listed on stock exchanges in the US.
- **The MSCI Emerging Markets** (MSCI EM) Index captures large and mid cap representation across 26 Emerging Markets (EM) countries.
- **The iBoxx iShares High Yield Corporate Bond Index** (iBoxx HY) is designed to reflect the performance of USD denominated high yield corporate debt.
- **VIX** is a CBOE index that represents equity volatility of 30-day expectations of the S&P 500 equity index.
- **Bloomberg Barclays US Aggregate Bond Index** (“Barclays Agg”) is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS and CMBS (agency and non-agency).
- **Bloomberg Barclays US Treasury Inflation Linked Bond Index** (Series L). It measures the performance of the US Treasury Inflation Protected Securities (TIPS) market.

## Other

- **Global 10 year yields:** These time series represent the interest rate paid in the prevailing 10-year bond of each country at a certain point in time. Yield is the annual return that an investor would receive by holding each of the bonds to maturity.

## Important Notes

**Carefully consider the Funds’ investment objectives, risk factors, charges and expenses before investing. This and additional information can be found in the Funds’ full and summary prospectus, which may be obtained by visiting [www.kfafunds.com](http://www.kfafunds.com). Read the prospectus carefully before investing.**

Investing involves risk, including possible loss of principal. There can be no assurance that a Fund will achieve its stated objectives. ETF shares are not redeemable with the issuing fund other than in large Creation Unit aggregations. Instead, investors must buy or sell ETF Shares in the secondary market with the assistance of a stockbroker. In doing so, the investor may incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling. The NAV of the Fund’s shares is calculated each day the national securities exchanges are open for trading as of the close of regular trading on the New York Stock Exchange (“NYSE”), normally 4:00 p.m. Eastern time (the “NAV Calculation Time”). Shares are bought and sold at market price (closing price) not NAV. Market price returns are based on the midpoint of the bid/ask spread at 4:00 pm Eastern Time (when NAV is normally determined).

There is no guarantee by the Fund will declare distributions in the future or that, if declared, such distributions will remain at current levels or increase over time. The Fund is non-diversified. The Funds may invest in derivatives, which are often more volatile than other investments and may magnify the Funds’ gains or losses.

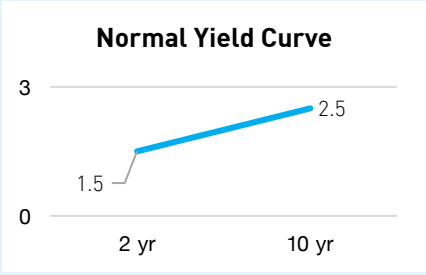
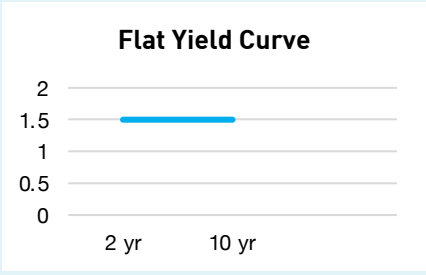
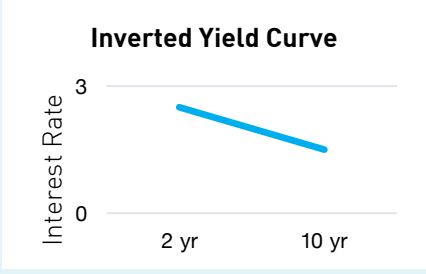
There are risks involved with investing in options including total loss of principal. Options investing is not suitable for all investors. This fund utilizes sophisticated options strategies which may not be suitable for all investors. For a more comprehensive discussion of the risks involved in options investing, please review Characterizations and Risks of Standardized Options available at <http://www.theocc.com/about/publications/character-risks.jsp> or contact the Options Clearing Corporation directly at 1 N. Wacker Dr., Suite 500, Chicago, IL 60606. (1-888-678-4667)

The KFA ETFs are distributed by SEI Investments Distribution Company (SIDCO), 1 Freedom Valley Drive, Oaks, PA 19456, which is not affiliated with Krane Funds Advisors, LLC, the Investment Adviser for the Fund. [R\_US\_KS\_SEI]

# Appendix



## Yield curve environments

Economic Environment	Type of Yield Curve	Yield Chart	Real Life Example
<p>Short Term Rates &lt; Long Term Rates</p>	<p>Normal: When the 2yr rate is lower than the 10yr rate</p>	 <p><b>Normal Yield Curve</b></p>	<p>You would have to decide if the increased yield you receive is worth locking up your money for the additional time</p>
<p>Short Term Rates = Long Term Rates</p>	<p>Flat: When the 2yr rate equals the 10yr rate</p>	 <p><b>Flat Yield Curve</b></p>	<p>You would tend to buy the shorter dated CD in this example. Why lock up your money when you are not getting rewarded</p>
<p>Short Term Rates &gt; Long Term Rates</p>	<p>Inverted: When the 2yr rate is higher than the 10yr rate</p>	 <p><b>Inverted Yield Curve</b></p>	<p>You would tend to buy a shorter dated CD in this example. Why lock up your money when you are getting less yield?</p>

## AUM doesn't matter

### 1. Look at the overall ownership, not the fund ownership

- Exchange-traded funds (ETFs) are a wrapper, and although an investor may hold a large percentage of an ETF, one must look at the percentage owned of the underlying asset class.

### 2. Not impacted by other investors

- The ETF structure is unique in that all investors transact independently on an exchange. Being a large or small owner in a fund does not mean you're more or less impacted by the actions of other investors. In a mutual fund, all investors are impacted by the trading activity of other holders in the fund.

### 3. No principal risk in closure

- If a fund were to close, neither large nor small investors would have a principal risk. The fund would be liquidated by the portfolio manager, and the investors would receive back NAV of the fund, minus costs, at the time of liquidation.

### 4. Trading in & out

- Investors can trade in and out of a fund regardless of the fund's AUM. ETF liquidity providers (market makers) can easily transfer the liquidity of the underlying basket in to ETF shares. Market makers also accept NAV based orders for larger tickets.

## ETF Liquidity

### 1. An ETF isn't a stock

- If an ETF doesn't trade a certain number of shares per day, is the fund illiquid? No. It's a plausible assumption from a single-stock perspective, but with ETFs, we need to go a level deeper. The key is to understand the difference between the primary and secondary market liquidity of an ETF.

### 2. Primary Market Vs. Secondary Market

- Most noninstitutional investors transact in the secondary market—which means investors are trading the ETF shares that currently exist. Secondary liquidity is the “on screen” liquidity you see from your brokerage (e.g., volume and spreads), and it's determined primarily by the volume of ETF shares traded.
- However, one of the key features of ETFs is that the supply of shares is flexible—shares can be “created” or “redeemed” to offset changes in demand. Primary liquidity is concerned with how efficient it is to create or redeem shares. Liquidity in one market is not indicative of liquidity in the other market.
- The determinants of primary market liquidity are different than the determinants of secondary market liquidity. In the secondary market, liquidity is generally a function of the value of ETF shares traded; in the primary market, liquidity is more a function of the value of the underlying shares that back the ETF.
- When placing a large trade—on the scale of tens of thousands of shares—investors are sometimes able to circumvent an illiquid secondary market by using an “authorized participant” (AP) to reach through to the primary market to “create” new ETF shares at NAV price.