MANAGING VOLATILITY AS AN ASSET CLASS
FIVE QUESTIONS

Since at least 1987, alpha coming from classic fund management strategies, actually came from shorting volatility inside of an artificial "stability bubble" without which, asset allocation would have been irrelevant. How and why did it happen? The answer comes from asking five critical questions.

DECEMBER 2014

Systemic Risk Averse Funds

NUMBER ONE: IS MARKET TIMING* EVERYTHING?

Though equity valuation can go higher from here, as it did in 2000, this is only the third time in 115 years that it reaches 2 standard deviations over the mean (Chart 1). Periods of rich valuations are linked to periods of abrupt and often steep losses, so how will you protect your portfolio from the increasingly likely "left-tail" event that can destroy 20%-50% of total value? (Chart 2).

"Traditional investment planning does not account for whether markets are cheap or expensive. An investor who visited a traditional Investment Advisor at the peak of the technology bubble in early 2000 would, in practice, be advised to allocate the same proportion of his wealth to stocks as an investor who visited an Advisor near the bottom of the markets in early 2009. This despite the fact that the first investor would have had a valuation-based expected return on his stock portfolio from January 2000 of negative 2% per year, while the second investor would expect inflation-adjusted compound annual returns of 6.5%. For an investor with $1 million to invest, this would represent a difference of more than $1.26 million in cumulative wealth over a decade" Butler & Philbrick.
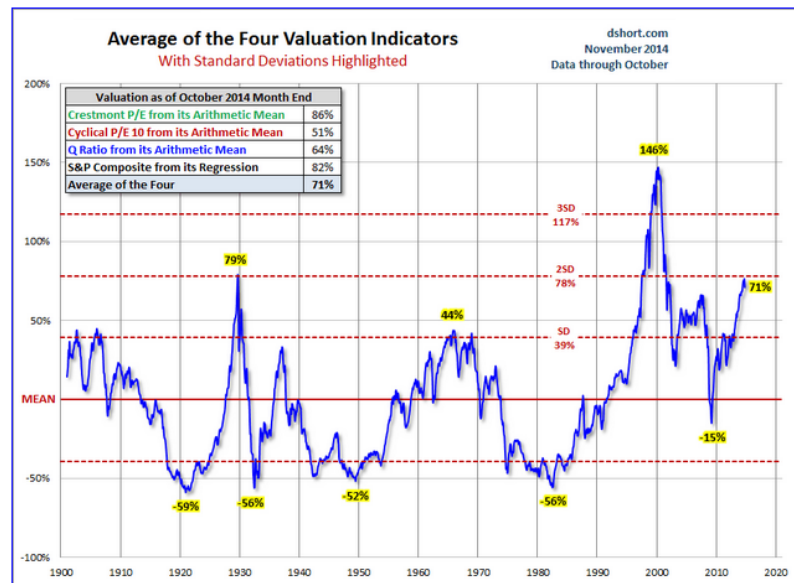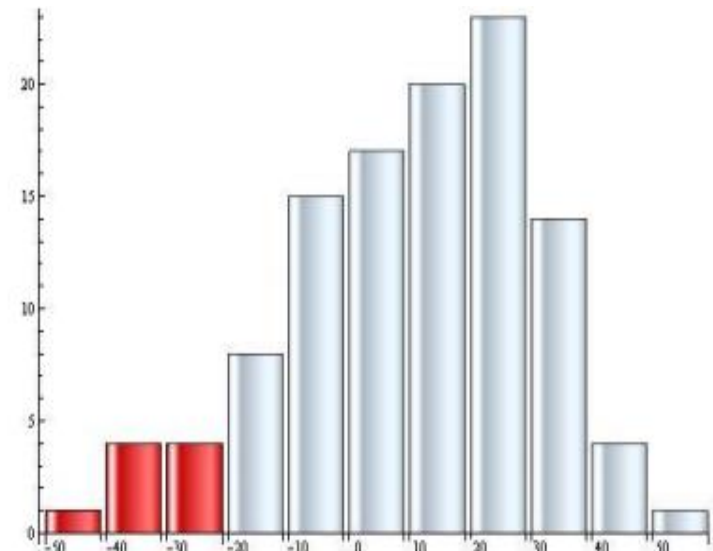
Chart 1. Avg. of Top 4 Valuation Ind. (% over mean)   Chart 2. The S&P 500 "Left Tail" (1-yr ret. 1901-2014)

NUMBER TWO: WHAT IS DRIVING THE NEXT "LEFT-TAIL" EVENT?

Due to risk aversion, an issuer's financing cost should increase, as debt rises (see blue-shade area in Chart 3). Yet, as G-7 debt quadrupled from $20 trn (180% of 1986 GDP) to $100 trn (280% of 2013 GDP), real interest rates dropped by 500% and central banks assets grew by 500% (Chart 4). As proverbial Ponzi Schemers, G-7 central banks attracted "fresh funds" (blue-shade peaks) to cover "runs on the bank" (volatility crises), allowing bankrupt, systemically important economic agents to swap their impaired-loan portfolios for newly-issued sovereign debt. In essence, central banks short volatility to force real interest rates down, which automatically increases Net Present Value for income-producing assets and spurs a new cycle of debt-leveraged investment.

Chart 3. Low Interest Rates in a Time of Debt (1986-2013

Rhs, % of GDP:
- G7 debt public and private non-fin sector

Sources: IMF; national data; BIS estimate

Lhs, in per cent:
- Long-term index-linked bond yield[1]
- Real policy rate[2]
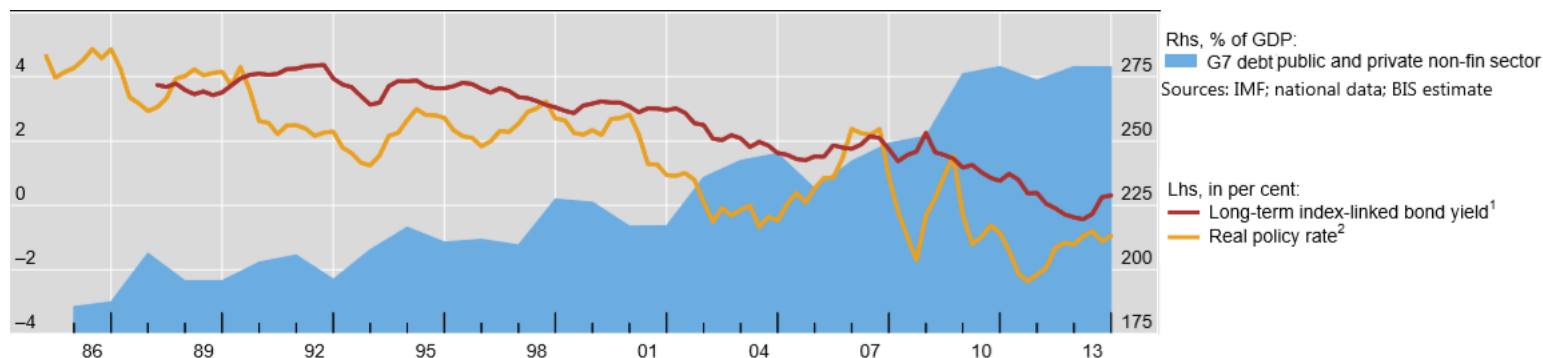
Chart 4. Central Bank Balance Sheet Expansion (2000-2014)

Central bank assets, in USD trillions

— Advanced economies   — Emerging markets
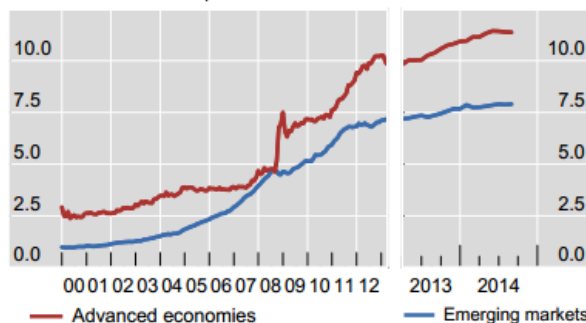
NUMBER THREE: ARE CENTRAL BANKS SHORTING VOLATILY?

Once G-7 public and non-financial debt entered the infinite feedback loop of Ponzi financing in 1987, central banks lost the ability to normalize interest rates without triggering market chaos, 3-5 years later (Chart 5). This is why extreme volatility spikes follow the end of each credit expansion (blue + red shaded tops) and sink only after asset-prices correct. Furthermore, superimposing Chart 5 over Chart 3 (Chart 6), shows that after each volatility spike, credit aggregates contract, but total debt increases. Indeed, as financial debt drops below zero (1991-92, 2000-01, 2008-10 & 2012-14), non-financial debt balloons, as G-7 nations issue new sovereign debt for their central banks to swap for impaired bank loans (see how in page 3 of our June report).

Chart 5. Extreme Volatility Spikes Follow the End of Credit Expansions
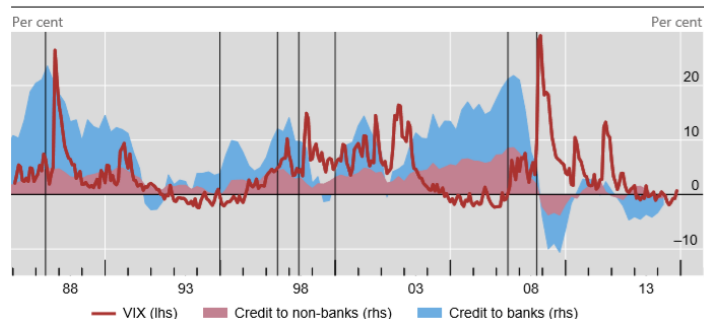
Chart 6. How G-7 Public Debt Replaces Bad Loans

NUMBER FOUR: CAN "RISK-FREE" ASSETS BE "THE MOST RISKY" ASSETS?

Despite repressing historical volatility (Chart 7) by absorbing incremental systemic risk, G-7 central banks escalated implied volatility (Chart 8), which in turn, exacerbates demand for what financial markets consider "riskless" assets. Excess demand for riskless assets (Not "search for yield") allows G-7 sovereign debt issues and fixed-income assets in general, to exhibit the grossest mispricing (Lowest return) among asset classes, practically assuring that investors with the lowest risk-tolerance, suffer the highest losses from the next volatility spike. Ultimately, by quintupling G-7 debt stock and central-bank balance-sheet assets, G-7 debt tripled G-7 Aggregate GDP (Chart 3), sacrificing the systemic solvency that had formerly justified its "riskless" status.

Chart 7. Historical Volatility (Oct. 2008-Present)

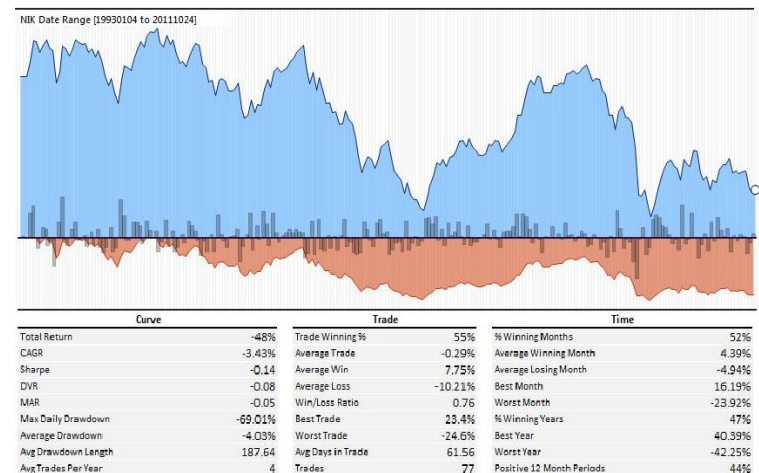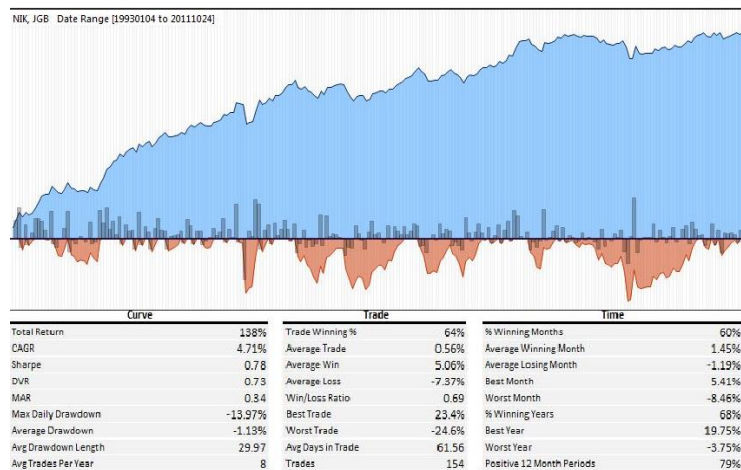Chart 8. Historical Versus Implied Volatility (YTD 2014)

NUMBER FIVE: CAN WE VIEW VOLATILITY AS AN ASSET CLASS? (PART I)

As central banks artificially pushed asset prices up, risky assets have become increasingly correlated, so anytime markets retreat or go sideways, volatility grossly surpasses expectable values. This creates unprecedented opportunities for using volatility as a parameter to harvest the capital markets. There are several portfolio management techniques centered on profiting from volatility and while they might require high turnover, they are engineered to attain below-average degrees of volatility and thus, high Sharpe and Sortino ratios. Here are two, we believe are highly effective:

• Dynamic Volatility Weighted Rebalancing (DVWR) captures a large proportion of upside returns from a diverse set of asset classes, while rebalancing them continuously to optimize correlation dynamics according to their respective changes in volatilities, maximum drawdowns, low-high differentials, etc. In short, one doesn't need to be right about which particular asset classes will do well in the future, as long as they all experience significantly uncorrelated volatilities that get constantly rebalanced, in order to harvest the change. Chart 9, shows how Butler & Philbrick applying DVWR, back-tested 2 asset classes (50%/50% Japan stocks & bonds) to obtain 4.7% CAGR vs. -3.4% for Nikkei Buy & Hold (Chart 10) over 18 years.

Chart 9. Dynamic Volatility Weighted Rebalancing, 50/50 Stocks/Bonds   Chart 10. Nikkei 'Buy and Hold'

Curve		Trade		Time	
Total Return	138%	Trade Winning %	64%	% Winning Months	60%
CAGR	4.71%	Average Trade	0.56%	Average Winning Month	1.45%
Sharpe	0.78	Average Win	5.06%	Average Losing Month	-1.19%
DVR	0.73	Average Loss	-7.37%	Best Month	5.41%
MAR	0.34	Win/Loss Ratio	0.69	Worst Month	-8.46%
Max Daily Drawdown	-13.97%	Best Trade	23.4%	% Winning Years	68%
Average Drawdown	-1.13%	Worst Trade	-24.6%	Best Year	19.75%
Avg Drawdown Length	29.97	Avg Days in Trade	61.56	Worst Year	-3.75%
Avg Trades Per Year	8	Trades	154	Positive 12 Month Periods	79%

Curve		Trade		Time	
Total Return	-48%	Trade Winning %	55%	% Winning Months	52%
CAGR	-3.43%	Average Trade	-0.29%	Average Winning Month	4.39%
Sharpe	-0.14	Average Win	7.75%	Average Losing Month	-4.94%
DVR	-0.08	Average Loss	-10.21%	Best Month	16.19%
MAR	-0.05	Win/Loss Ratio	0.76	Worst Month	-23.92%
Max Daily Drawdown	-69.01%	Best Trade	23.4%	% Winning Years	47%
Average Drawdown	-4.03%	Worst Trade	-24.6%	Best Year	40.39%
Avg Drawdown Length	187.64	Avg Days in Trade	61.56	Worst Year	-42.25%
Avg Trades Per Year	4	Trades	77	Positive 12 Month Periods	44%

NUMBER FIVE: CAN WE VIEW VOLATILITY AS AN ASSET CLASS? (PART II)

• Volatility Driven Alpha involves designing a tail hedge to provide a convincing structure to maintain exposure to the market, rather than moving investments to seemingly "riskless" assets. In fact, given the historical frequency of tail events, if an investor could break-even during the major drawdown periods (see Chart 2), annualized historical S&P 500 returns increase from 7.4% to 14.5% (Assuming zero returns during the crashes). This has a compounding effect as time moves forward, since the hedge generates liquidity precisely when attractive assets become deeply discounted, which allows profits to be reinvested at valuations that are historically associated with the highest returns (Concepts from Mark Spitznagel's "Dao of Corporate Finance").

COROLARY

Since at least 1987, alpha coming from classic fund management strategies, actually came from shorting volatility inside of an artificial "stability bubble" (Chart 11) without which, asset allocation would have been irrelevant. In fact, many investors and investment professionals perceive they add value via security selection and market timing, regardless of volatility. We think volatility may become the most important "asset class" this decade. As investment legend David Swensen said, "A fiduciary would offer low-volatility funds and encourage investors to stay the course." A lead that points us to endeavor, not for the highest possible return, but for the highest possible Sharpe ratio, in order to minimize conflicts of interest, the top goal of the Fiduciary Pyramid (Chart 12).

Chart 11. Tobin's Q ratio Vs S&P500 3-Month Volatility   Chart 12. The Fiduciary Pyramid'
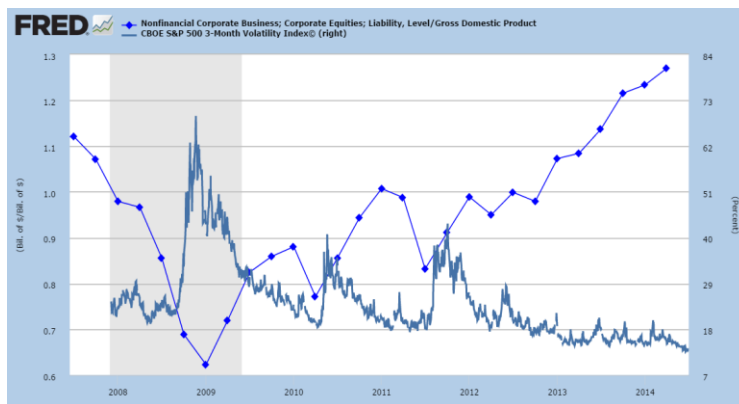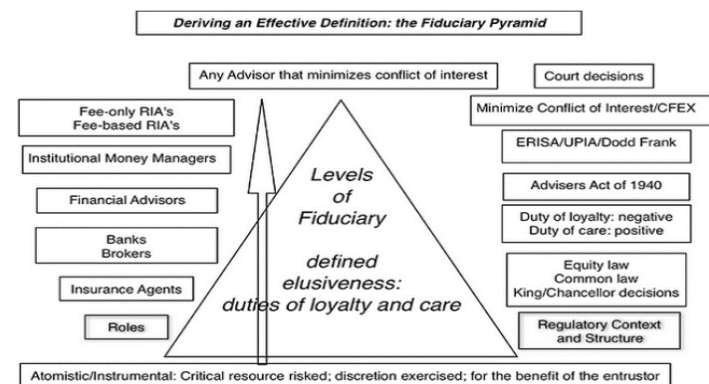
INVESTMENT PERSPECTIVE

Three decades of forceful interest-rates reductions have deeply distorted market prices across asset classes around the world. The distortion is best illustrated by issuers expanding debt by 300% at a negative financing cost, while holding increasingly illiquid assets. For instance, G-7 debt grew from $25 trillion to over $100 trillion since 1987 (now at 300% of GDP), while G-7 central banks cut real interest rates from 4.5% to -0.5%. Clearly, by lowering interest rates, G-7 nations make the NPV of all assets (including illiquid ones) match the rise in total debt. Yet, as "risk-free" status allows G-7 sovereign debt to continue increasing the "unbiased" value-gap between assets and liabilities, it becomes a systemic risk, time-bomb. In contrast, G-7 central banks have reached critical limits to balance-sheet expansion and their ability to push real interest rates further into negative territory. As these systemic flaws, magnify investment risks back to the explosive dimension of the 2007/2008 market crisis, we build portfolios to mitigate the extreme losses that would arise from a systemic market crash, irrespective of asset class.

INVESTMENT STRATEGY: LONG VOLATILITY

Systemic Risk Averse Funds ("SRAF") provides stand-alone portfolios that allow investors to choose from Low, Medium or High Risk Protection to offset their current level of investment-risk exposure. To understand these strategies, you need to think of volatility as an asset class: Being long volatility means that if market prices become more volatile in stocks, bonds, commodities or any asset class relevant to a SRAF strategy, its portfolio will benefit or if not, suffer limited losses. SRAF, as any risk averse investor, prefers lower returns with known risks, over higher returns with unknown risks. SRAF achieves this objective by holding Market-Price Insurance***** contracts that can lose only up to the value of the insurance premium paid, but may yield unlimited times that value, if volatility surges previous to expiration. Additionally, depending on market-risk exposure, an investor can choose a Medium-Range hedging approach (Strategy #1) offered by a portfolio invested in other Long-Volatility hedge funds; a High-Range one (Strategy #2), invested only in "tail-hedging derivatives" or a Low-Range one (Strategy #3), invested in arbitrage trading. Generally, neither #1, nor #2 produce gains in flat or rising markets, while #3 can yield limited gains in any type of market. Strategy #1 gained an average annual return of 10.9% and 1.6 Sharpe Ratio since inception (7/2012) to End-2014, while strategies #2 and #3 won't open until May/June 2015.

**By Market-Price Insurance, we mean financial derivatives contracts, such as options, futures, forwards, swaps or their multiple combinations. Derivatives contracts allow an investor to benefit from the price movement of a specific security without owning it. The two most common types of financial derivatives are options, which allow an investor the opportunity to buy or sell an underlying security, and futures, which require a contract-holder to buy the underlying security. Derivatives also differ in terms of the types of securities underlying the contracts, which can include stocks, bonds, commodities, foreign currencies, etc.*

FROM INCEPTION TO DECEMBER 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	YTD	Annualized YTD	Performance*
2014	-8.31%	-8.31%	-2.40%	0.35%	-1.18%	-0.90%	0.82%	0.85%	0.95%	4.40%	2.09%	3.95%	0.07%	0.07%	**AVG YTD**
2013	5.64%	0.30%	1.20%	5.06%	7.32%	-4.81%	-4.24%	-0.88%	-1.96%	-2.93%	6.26%	4.20%	15.12%	15.12%	10.93%
2012							-2.29%	3.24%	3.53%	1.01%	0.50%	3.21%	9.41%	19.71%	

*The returns from July 2012 to November 2013 are the returns of the VDDF, a Curaçao fund, whose entire portfolio was transferred to SRAF when SRAF commenced Operations in December 2013. We have verified all the monthly performance numbers independently with the underlying fund's administrators. ⊙ INVESTA TRUST
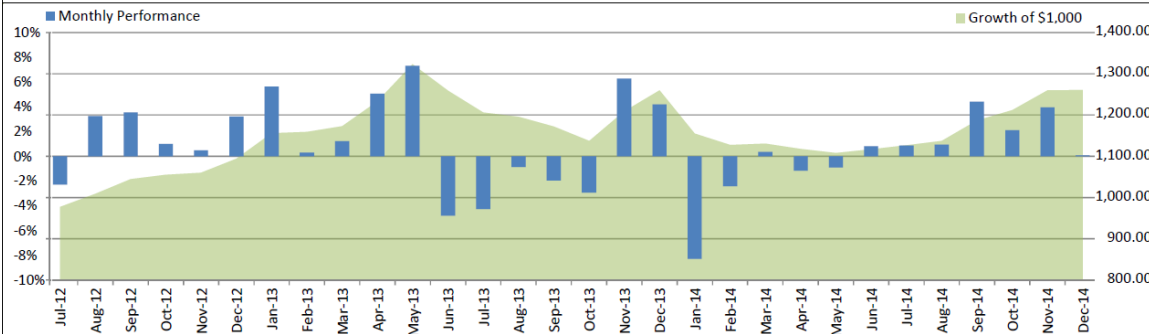
Past performance is no guarantee of future results. The historical performance of the fund is not necessarily indicative of future performance. The investment return and principal value of an investment will fluctuate, and an investor may have a gain or loss upon disposition of his/her investment. The information provided is intended for informational purposes only.

ARITHMETIC AVERAGE

DATES	S&P 500	3-month T-Bill	10-year T-Bond	SRAF (2012-2014)
1928-2014	11.53%	3.53%	5.28%	**10.93%**
1965-2014	11.23%	5.04%	7.11%	
2005-2014	9.37%	1.44%	5.31%	
STDEV	19.79%	3.04%	7.78%	**4.67%**
RISK PREMIUM	8.00%		1.75%	**7.40%**
SHARPE RATIO	0.40		0.22	**1.58**

INVESTMENT MANAGER

Sequoian Asset Management, LLC is an investment management firm that specializes in tail hedging as a means to enhance long-term investment returns and significantly lower risk during market crashes. Sequoian was founded in 2005 by CIO Oswaldo Lairet (LINKEDIN BIO), with over two decades of trading experience and incremental development of its current investment approach.