Introduction to
Everestia Target Program

At

Everestia LLC

August 2023

Introduction

Everestia LLC

- Everestia LLC is a start up commodities trading advisor (CTA) firm
- Related Activities of the Principal: Volatility trading (Please refer to the disclosure document for detail)

Everestia Target Program

- "Everestia Target Program" is the flagship proprietary trading program of Everestia LLC
- The program trades volatility futures and equity index futures with a proprietary theta strategy

Related Activities of the Principal

- Developed trading signal and implemented algorithms on volatility and equity trading
- Studied historical data and calibrated the Everestia Target Program
- NEITHER THIS TRADING ADVISOR NOR ANY OF ITS TRADING PRINCIPALS HAVE PREVIOUSLY DIRECTED ANY ACCOUNTS

Biographies

- John Gupta-She, CTA
  - Massachusetts Institute of Technology (MIT) class of 2027
  - Top-tier winner in mathematics Olympia in United States and internationally
  - Published author of financial mathematics and trading strategies

The Theta Strategy

The Theta Trade as an Investment Strategy

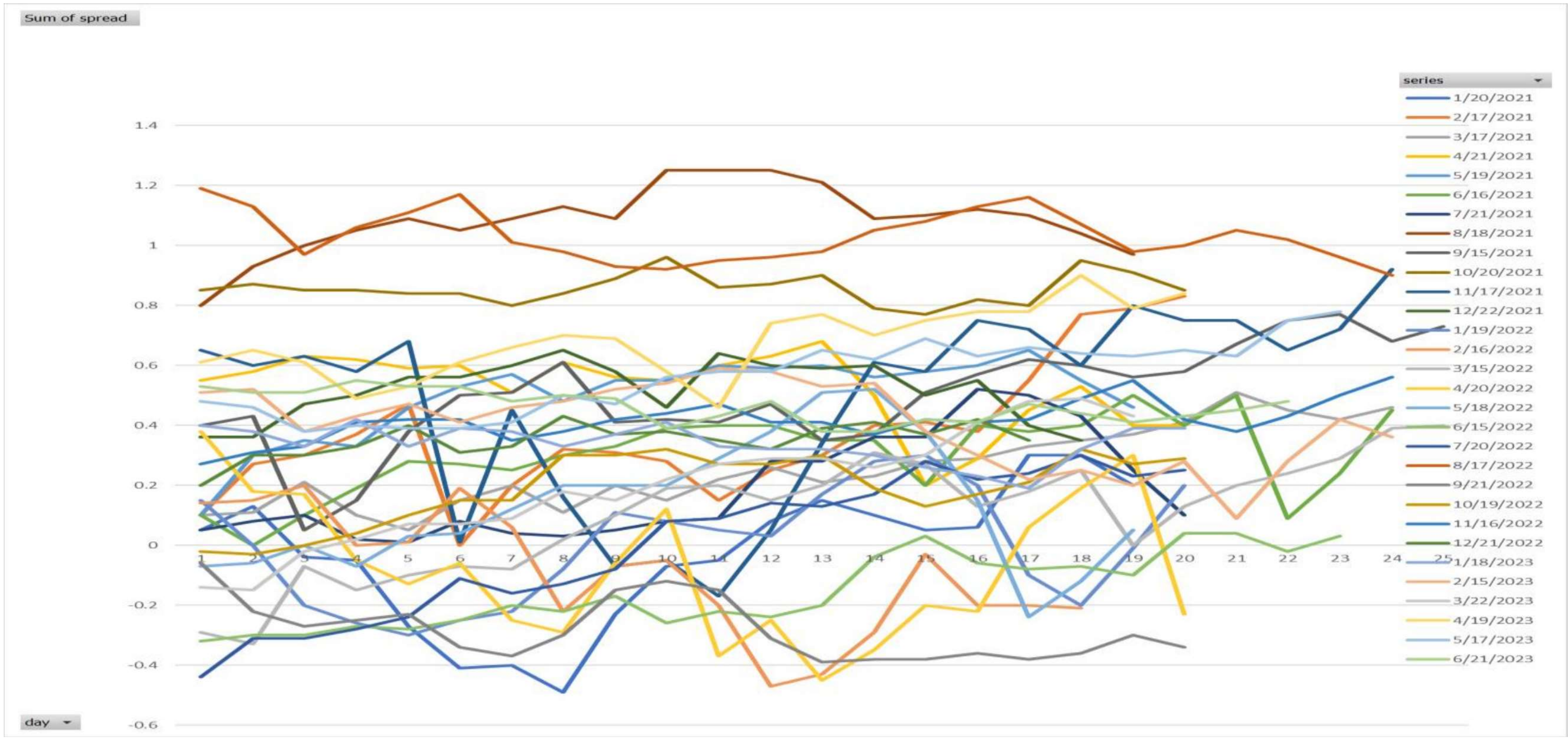
- The Theta trade: decline in the value of an option due to the passage of time
- VIX future spread trading: the natural growth of the VIX future spread over time. Option price is approximately proportional to the square-root of time.
- Proprietary indicator of equity market stress and relief cycle:
  - Correlation of VIX and S&P 500
  - Implied volatility curve, skew,
  - VIX future curve

<u>Quotes on the Passing of Time</u>

- "Although we try to control it in a million different ways, the only things you can ever really do to time are enjoy it, or waste it. That's it." – A. J. Compton
  - While S&P 500 graph has a clear upward trend, a Theta trade, which is built on solid modeling methodology and market practice, relies on passing of time as the main driver of profit.
- "Nothing ever stays the same. There was no force in this world strong enough to withstand the march of time." – Sam J. Charlton
  - The cause for market stress is weaker than the force of time. Market stress will pass. Volatility is mean reverting.
- "With enough time, you can get used to almost anything." – Katherine Applegate
  - Even when the broader market has downward pressure, the VIX spread often recover before the market recovers.

Sample Statistics of VIX Future Spread

- **Statistics of VIX Future Spread**
  - Below graph has a sample of 30 VIX future calendar spreads of 4th month and 5th month on the VIX futures curve, for the period January 2021 to June of 2023. Vertical axis is the spread. The horizonal axis is the number of days since last VIX expiry date.
  - The series is labeled by the last VIX expiry date. On each trading date, VIX future curve consists of front month (1st),2nd, 3rd, 4th , 5th, etc expiries. For example, on the first series, labeled 1/20/2021, the first data point will be the spread of the 4th and 5th VIX future on 1/21/2021. The second data point will be the spread of the 4th and 5th VIX future on 1/22/2021.
  - Data source https://www.cboe.com/us/futures/market_statistics/historical_data/.
  - The spread widens in 21 out of the 30 months. The spread narrows in 9 out of the 30 months.
- **Risks of VIX Future Spread Trades**
  - The spread does not widen in all months. An effective market stress indicator is critical to avoid large drawdowns.



Background of the Theta Strategy

Benefit and Risk of VIX Future Spread Trading

- Clear upward trend is based on Black-Scholes option pricing theory,
  - Option value is approx. proportional to the square-root of time with constant volatility input
- Movement is range bound, with range being more predictable than the range of the equity index (SP500)
- Rapid market movements, Volatility of Volatility, provide both opportunities and challenges
- Risk:
  - Sudden large adverse move causing margin calls and forced closure of position
  - Selling VIX future is the same as writing a basket of put and call options for income, with "delta" risk is reduced, as with option writing strategy, the profit / gains comes slow and steady, but the risk of loss is sudden and significant

A Classical Volatility Trading Strategy

- A classical strategy to trade the volatility market is to sell options, and delta hedge with the underlying. The profit is from the different between the implied vol and the realized vol.
- The VIX index and the VIX future trading make the classical strategy more efficient and operationally feasible for "retail" traders
- Selling VIX futures is the same as selling a basket options, puts and calls. And the basket is already "naturally" delta hedged, with different weight at different option expiry.
- How the option price and VIX future behave are deeply rooted in complex and sound mathematical theory. The mean reversion of Vol is strong. More so is the VIX future spread. And the relationships are "fundamental."

Volatility Market Indictors as Trading Signals

Volatility Market Indictors as Trading Signals

- The volatility market reaction to any event is often “leading” relative to the boarder market.
- Volatility market reaction reflects the market mechanism of market forces for “long” and for “short” when market is “pricing in” an event
- Volatility market indicators are more reflective to events than other “technical” indicators such as moving average, momentum, with more data available
- Some of the Volatility market indicators includes VIX spot, volatility smile / smirk / forward skew, VIX future curve

Fundamental differentiator at Everestia LLC

- A proprietary indicator to detect true downtrend (once a year or once per N-year event). Note that a once-a-quarter event will likely not cause a margin call for a buy and hold strategy. A once-a-year or once-a-decade event might cause margin calls and subsequent losses if the risk is not managed.
- The indicator is volatility based, looking at the correlation breakdown between volatility and the market. It is useful in decision-making during the whole market stress and recovery cycle. Other proprietary secondary indicators reinforce the primary indicator.
- The strategy has a strong theoretical background:
  - Market implied vol vs. realized vol, mean reversion.
  - Dependency of option pricing as function of square-root of time.
  - Risk neutral hedging vs. statistical / real world probability risk management.

Contact

For additional information on

Everestia Target Program

at

Everestia LLC

www.everestiallc.com

Contact John Gupta-She at:
Everestia.llc@gmail.com
917-3455256
929-3301364