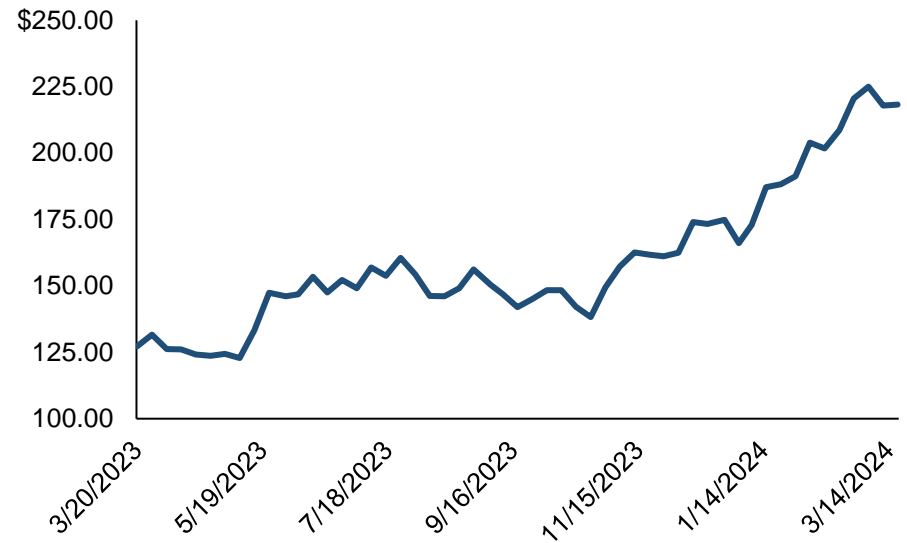


VanEck Semiconductor ETF | One-Year Price Chart



Position Details

- VanEck Semiconductor ETF | SMH U.S. Equity
- Underlying Price: \$218.28
- Bull Call Spread
- Expiration Date: August 16th, 2024

Equity Derivatives Sector

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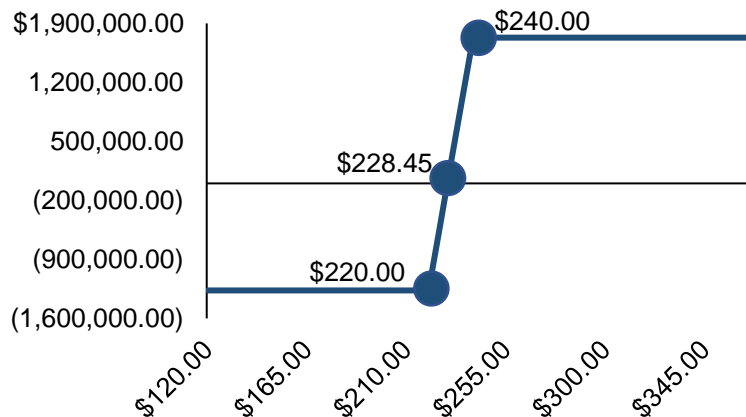
I. Product & Position Overview

Product & Position Overview

Product Description

- **VanEck Semiconductor ETF**
 - The Semiconductor ETF aims to mirror the performance of the MVIS US Listed Semiconductor 25 index. This fund concentrates its investments in the most significant and liquid U.S. listed companies involved in the semiconductor industry
- **Top SMH U.S. Equity Holdings**
 - Nvidia Corp. | 27.77%
 - Taiwan Semiconductor Manufacturing Co. | 9.57%
 - Advanced Micro Devices Inc. | 5.88%
 - Broadcom Inc. | 5.40%
 - ASML Holding | 4.89%

Payoff Diagram



Trade Breakdown

- **Bull Call Spread**
 - This strategy benefits from relatively bullish price movements in the underlying asset
- **Setup**
 - We Buy – 3.00k \$220.00 Calls | SMH U.S. Equity
 - We Sell – 3.00k \$240.00 Calls | SMH U.S. Equity
 - Max Profit: \$3,465,000.00
 - Max Loss: (\$2,535,000.00)
- **Expiration**
 - Date: August 16, 2024

Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**
 - **\$240.00 / \$230.00 / \$220.00**
 - Breakeven – \$228.45
- **Methodology**
 - The Equity Derivatives Sector expects a ~10.00% increase in the price of the underlying before the expiration date
- **Hedge Strategy**
 - If the underlying price were to decrease unexpectedly, the sector would look to reverse trade in this situation



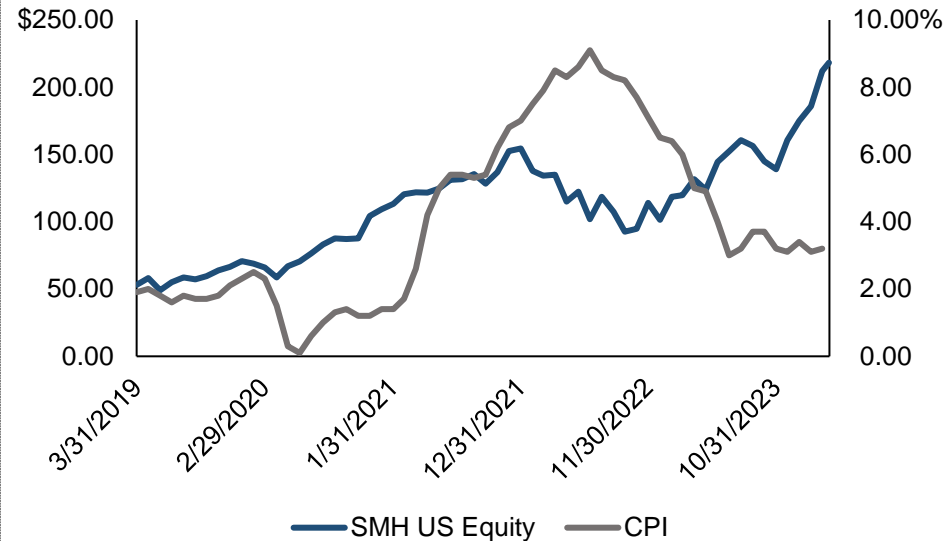
II. Macroeconomic Thesis

Macroeconomic Thesis

Macroeconomic Summary

- AI Growth Shows No Signs of Slowing with More Advancements**
 - Artificial Intelligence is moving into a path of maturity. A notable 66.00% of companies invested over \$1.00 mm. Showing the huge push and commitment towards AI
 - Artificial Intelligence is breaking into more companies than ever with 56.00% of U.S. workers using AI at work. With AI integration workers that use AI are 40.00% more productive than ones that do not
 - Nvidia (NVDA) just announced a new chip coming in 2024. The B200 Blackwell chip is set to be the world's most powerful chip. Major companies like Amazon, Google, Microsoft, and OpenAI are set to purchase and use this chip
- Federal Reserve Maintains Steady Outlook on Rate Cuts**
 - Fed officials maintained their forecast for rate cuts coming later this year, despite the data coming out higher than expected
 - The CME Fed Watch Tool indicates a 73.10% likelihood of a rate cut in the June meeting and an 85.10% probability for a cut in the July meeting
- Global Demand for Semiconductors is on a Rise**
 - Industry experts forecast a huge expansion in global chip manufacturing, driven by the continuous growth in market size. Manufacturers are ramping up efforts to produce chips on a larger scale
 - Global semiconductor sales experienced a significant jump, marking a 15.20% growth y/y in January. The market is on track for continued growth, with projections at \$119.40 billion by 2027

SMH US Equity vs. CPI



Market Pros & Cons

- Inflation readings drop sooner rather than later
- Nvidia (NVDA) surpasses earning expectations in May
- Semiconductor industry face supply chain risks
- Governmental trade restrictions emerge

III. Risk Analysis

Risk Analysis

Directional & Magnitude Risk

- **Delta Analysis**

- The Delta value for this trade is 0.1505
- For every \$1.00 change in the underlying asset, the contract will gain or lose \$0.1505
- The trade benefits from bullish movements in the underlying price of the ETF

- **Gamma Analysis**

- The Gamma value for this trade is 0.0004
- Gamma has a small impact on this trade
- If the underlying changes by \$1.00, the value of Delta will change by only \$0.0004

Implied Volatility Risk

- **Vega Analysis**

- The Vega value for this trade is 0.0244
- Vega value is positive because the price of the underlying asset is lower than the breakeven point
- The implied volatility of this trade stands at 35.00%, indicating that the trade is positioned to gain from price fluctuations beyond the breakeven point. The market volatility is approximately 30.00%, which is favorable for the trade as increased volatility has the potential to drive prices into the money ITM

Time Risk

- **Theta Analysis**

- The Theta value for this trade is (0.0074)
- The Theta value is negative because the option is out-of-the-money OTM; as time moves, the chance of the option expiring ITM gradually drops
- Theta is positive when the underlying is above the breakeven point, and time decay would help the trade

Interest Rate Risk

- **Rho Analysis**

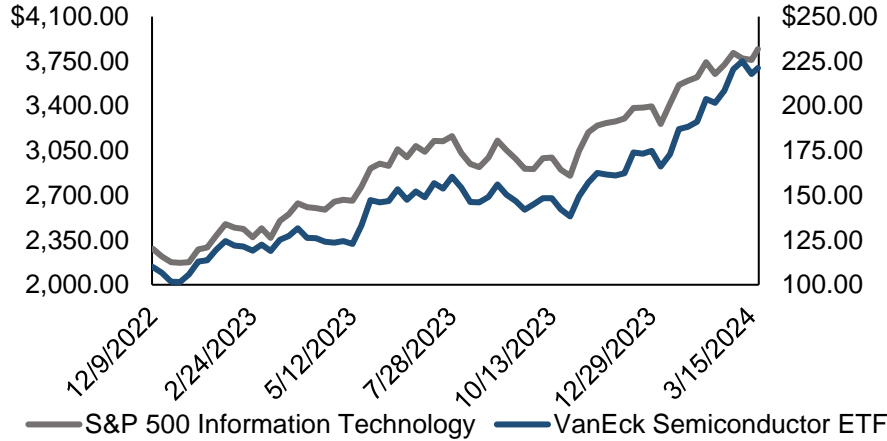
- The Rho value for this trade is (0.0294)
- The value of Rho in this trade is small due to the short and long positions offsetting each other
- If rates are cut earlier than expected, the Rho would increase and become positive



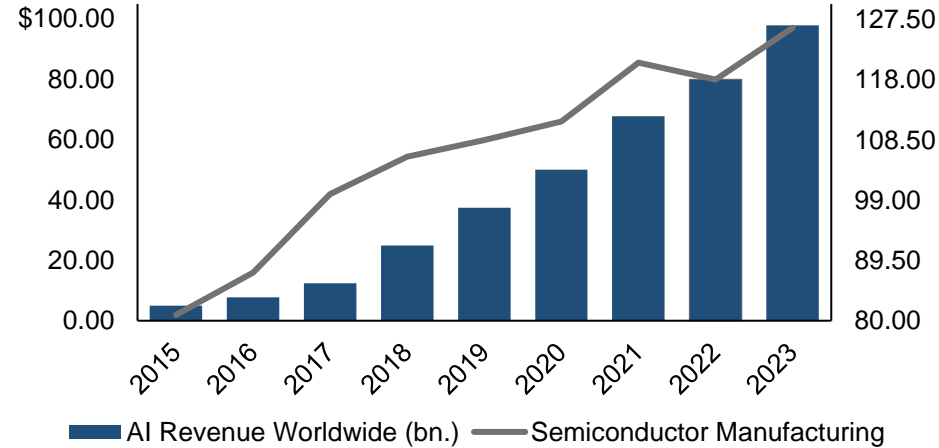
IV. Technical Bias & Fair Value

Technical Bias & Fair Value

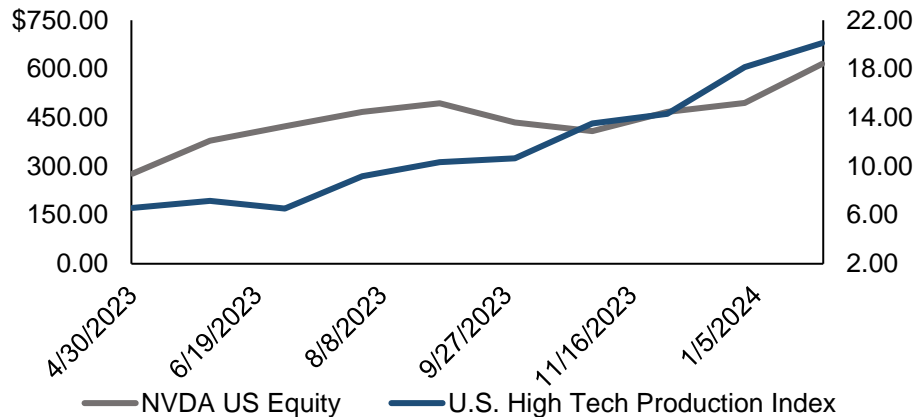
S&P 500 Info Tech Sector vs. VanEck Semiconductor ETF (SMH) | 15-Month Chart



AI Revenue Worldwide (bn.) vs. Semiconductor Manufacturing Index



Nvidia (NVDA) vs. U.S. High Technology Production Index



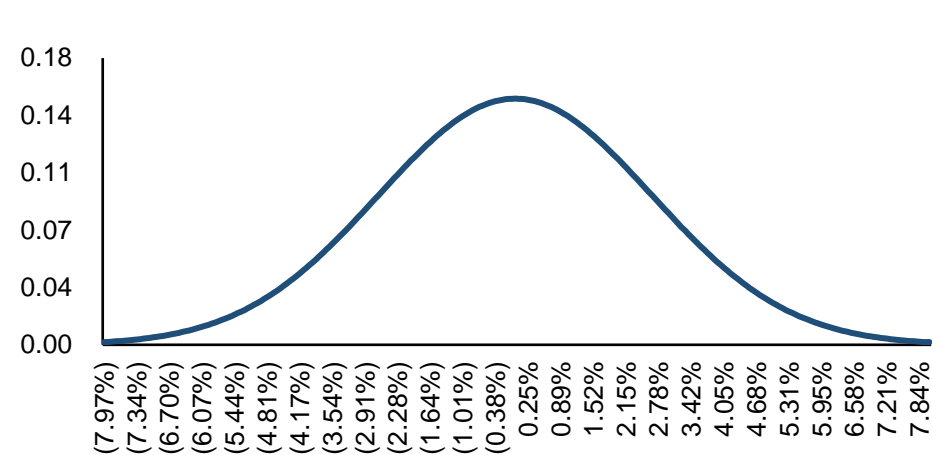
Synopsis

- S&P 500 Information Technology sector has been dominating sending the entire S&P 500 index to record highs. This dominance not only emphasizes the sector's strength but also shows significant growth within the semiconductor industry
- Integration of AI across various companies has led to a boost in revenue, making chip manufacturers ramp up production to meet the growing demand for innovative technology
- Nvidia (NVDA) has recently garnered significant attention as the most closely monitored stock. Their latest chip announcement holds the potential to mitigate the effects of the bubble, positioning U.S. technology production to align with the trend

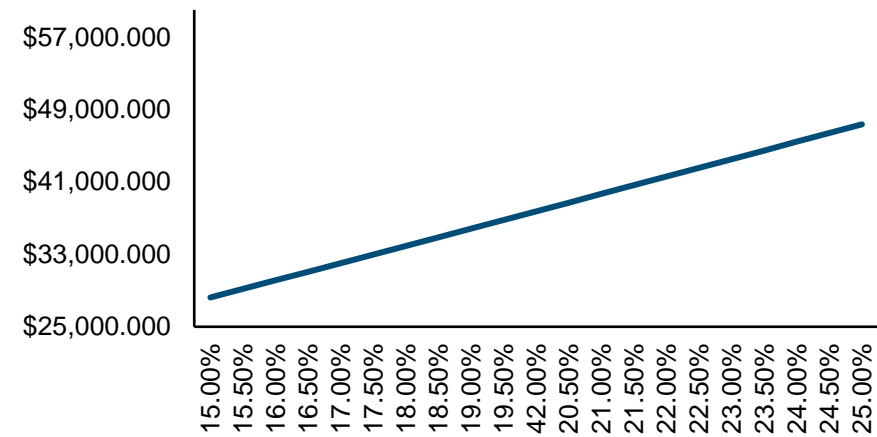
V. Volatility Analysis

Volatility Analysis

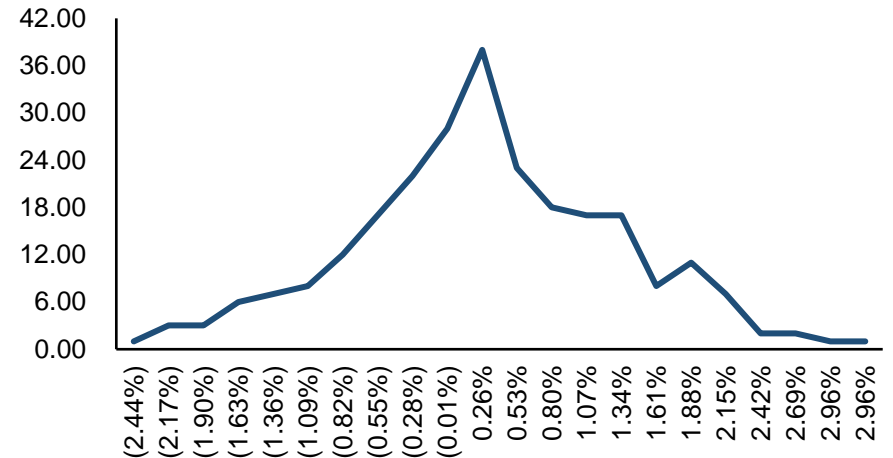
Expected Theoretical Daily Return Distribution



Position Volatility Sensitivity



Historical Daily Return Distribution



Synopsis

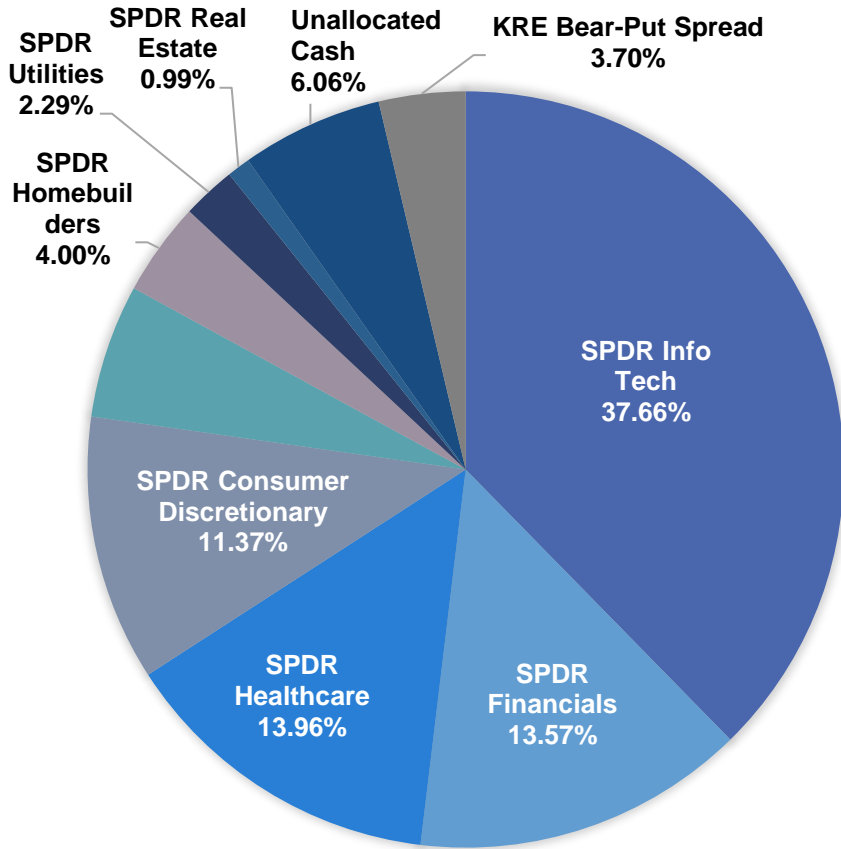
Asset Description	Option Premium
Theoretical Long Call	\$7.5100
Actual Long Call	\$8.6000
Theoretical Short Call	\$5.0400
Actual Short Call	\$5.5000
Theoretical Long Put Adj. for DV1	\$751.0000
Actual Long Put Adj. for DV1	\$860.0000
Theoretical Short Put Adj. for DV1	\$504.0000
Actual Short Put Adj. for DV1	\$550.0000
Theoretical Edge (LP) Assuming 100.00 k Contracts	(\$681,250.0000)
Theoretical Edge (SP) Assuming 100.00 k Contracts	\$287,500.0000
Total Theoretical Edge	(\$393,750.0000)



V. Capital Allocation

Capital Allocation

Current Portfolio Allocation



Proposed Portfolio Allocation

