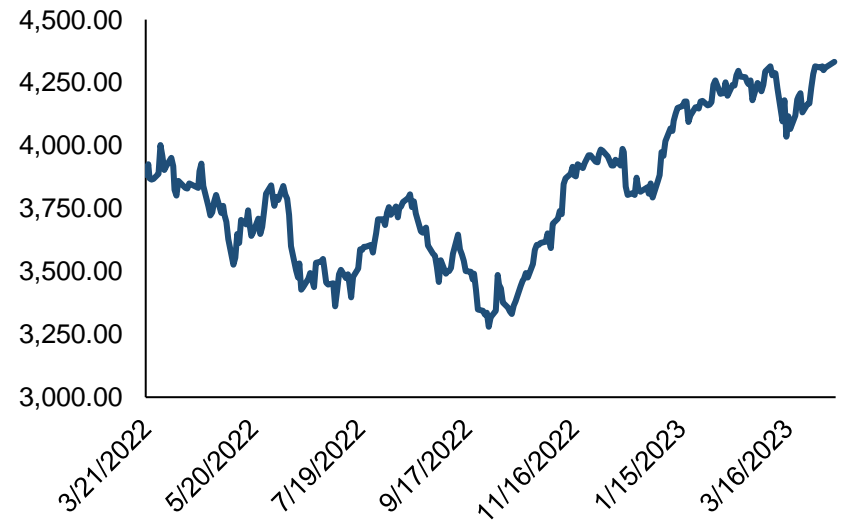


## Euro Stoxx 50 Index | One-Year Price Chart



## Index Derivatives Sector

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## Position Details

- Euro Stoxx 50 Index | SX5E 8
- Underlying Price: 4333.29
- Bull Call Spread
- Expiration Date: August 18, 2023

## Table of Contents

- I. Product & Position Overview
- II. Macroeconomic Thesis
- III. Risk Analysis
- IV. Technical Bias & Fair Value
- V. Capital Allocation



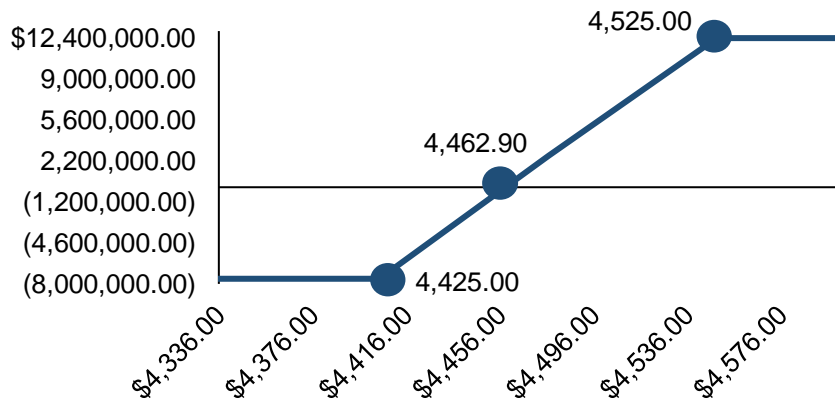
## I. Product & Position Overview

## Product & Position Overview

### Product Description

- **Euro Stoxx 50 Index**
  - The Euro Stoxx 50 Index is a free-float market capitalization weighted index that is comprised of 50.00 large blue-chip equities across 11.00 countries within the Euro-Area. It's top three constituents include France, Germany, and Netherlands
  - Sector weightings: Technology (14.70%), Consumer Products and Services (13.80%), Industrial Goods and Services (13.00%), Banks (11.80%), Health Care (6.80%), Insurance (6.40%), Energy (6.10%), Automobiles and Parts (5.10%), Food, Beverage and Tobacco (4.10%), Chemicals (4.00%)

### Payoff Diagram



### Trade Breakdown

- **Strategy Name**
  - A bull call spread benefits from bullish price movements in the underlying index
- **Setup**
  - We Buy 20.00 k OTM 4425.00 Calls | SX5E 8 C4425
  - We Sell 20.00 k OTM 4525.00 Calls | SX5E 8 C4525
  - Max Profit: \$11,379,204.00
  - Max Loss: \$6,944,796.00
- **Expiration**
  - Date: August 18, 2023

### Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**
  - **4,525.00 / 4,470.00 / 4,400.00**
  - Breakeven – 4,462.90
- **Methodology**
  - The index must trade up ~3.15% in order to see profit, an equivalent of 130.00 points. In the past 6.00 months the index has traded up 1,000.00 points
- **Hedge Strategy**
  - In the event that the index experiences adverse price movement, the Sector will seek to reverse trade



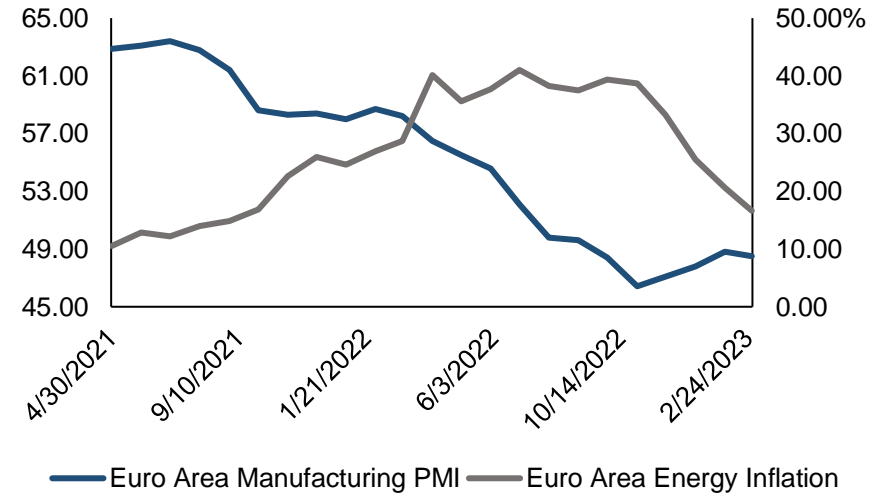
## II. Macroeconomic Thesis

## Macroeconomic Thesis

### Macroeconomic Summary

- **Easing Energy Inflation Uplifts Eurozone Manufacturing**
  - Fear of inoperable energy costs driven by energy inflation throughout 2022 caused many manufacturing companies across the Euro-Area to announce temporary closures
  - Increased demand for energy in winter months led forecasts to predict further record inflation in 4Q2023 after inflation neared record-levels in October at 41.50% y/y
    - Forecasts caused another series of factory closures which reversed the declining trend in unemployment across the Euro-Area
- **Resilient Services Points to Near Term Recession Aversion**
  - Services and Tourism contribute to 72.40% of Euro-Area GDP, the S&P Global Eurozone Services PMI sits at 55.00 for the month of March, the highest level since May 2022
  - Travel demand to Europe is expected to rebound in 2023; according to Kayak, searches for travel to Europe are up 77.00% from last year signifying further economic support
  - Euro-Area Unemployment is currently at a record low of 6.60% in February, strong employment figures point to economic strength in the near term despite high inflation figures
- **China Reopening Will Increase Demand for Luxury Goods**
  - The MSCI Europe Textile Apparel & Luxury is up 26.82% YTD already as Chinese spending is only beginning to ramp up
  - Chinese retail sales through February increased 3.50% y/y as consumers began to spend their \$2.20 T accumulated in 2022
  - China is estimated to add 250.00 mm middle-to-high end consumers in 2023 benefitting luxury holdings popular in China such as LVMH (LVMUY) and Hermès (HESAY)

### Eurozone Manufacturing PMI vs. Energy Inflation | One-Year Chart



### Market Pros & Cons

- Continued IT growth despite unfavorable interest rate conditions
- High inflation in the UK breaks, resulting in increased trade which further stimulates the Euro-Area economy
- The stress on the financial system causal of the banking crisis worsens and a broader contagion ensues
- The Federal Reserve completes their hiking cycle sooner than expected, causing further EUR/USD appreciation

## III. Risk Analysis

## Risk Analysis

### Directional & Magnitude Risk

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- **Delta Analysis**
  - The trade is positive delta with a value of 0.0930
  - The nature of the strategy results in a small but positive Delta value, for every \$1.00 increase in the underlying index the option value appreciates by \$0.09 being that we are in a net long position
- **Gamma Analysis**
  - Gamma is positive near zero at 0.0001
  - The small gamma value can be attributed to the offsetting nature of the strategy

### Implied Volatility Risk

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- **Vega Analysis**
  - Vega is 0.8085
  - The strategy is net long volatility as both legs are currently OTM, so increases in implied volatility will increase the value of the leg that we are purchasing faster than it will devalue the leg that we are selling
  - Implied volatility: 15.00%

### Time Risk

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- **Theta Analysis**
  - Theta is both small and negative with a value of (0.0564)
  - The net effect of time decay on this options strategy is relatively neutral, as it is eroding the value of the long position and increasing the value of the short position

### Interest Rate Risk

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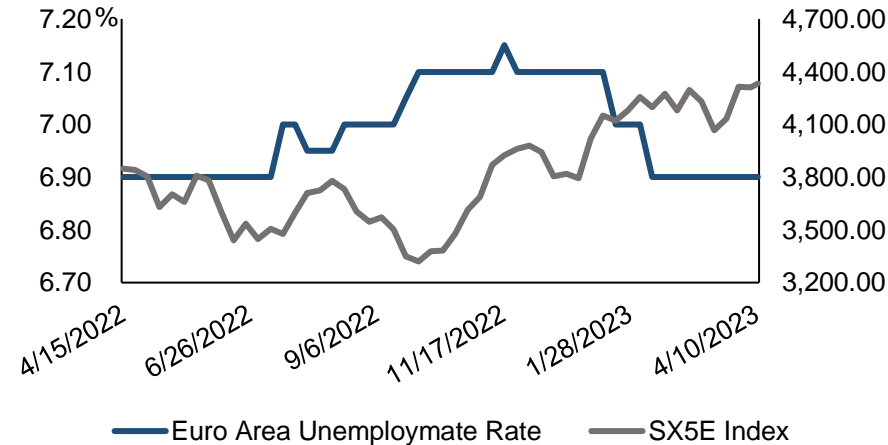
- **Rho Analysis**
  - Rho is positive with a value of 1.307
  - A 1.00% increase in the risk free rate would increase the value of the OTM long position more than it would devalue the OTM short position, resulting in a net positive Rho value



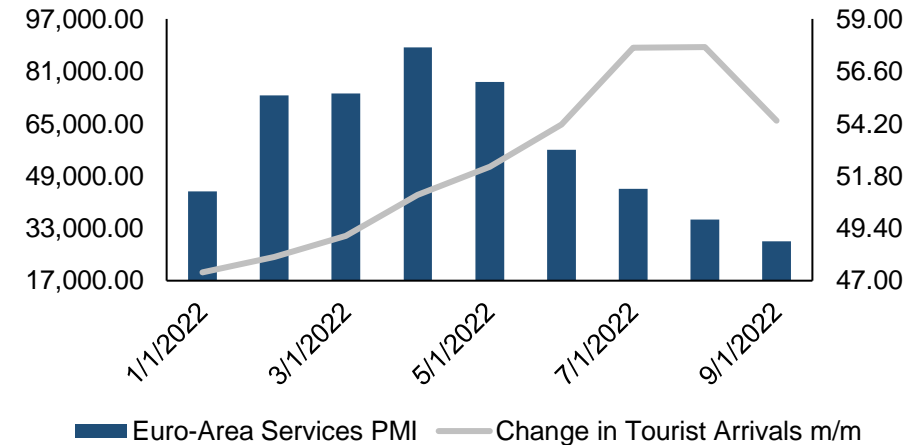
## IV. Technical Bias & Fair Value

## Technical Bias & Fair Value

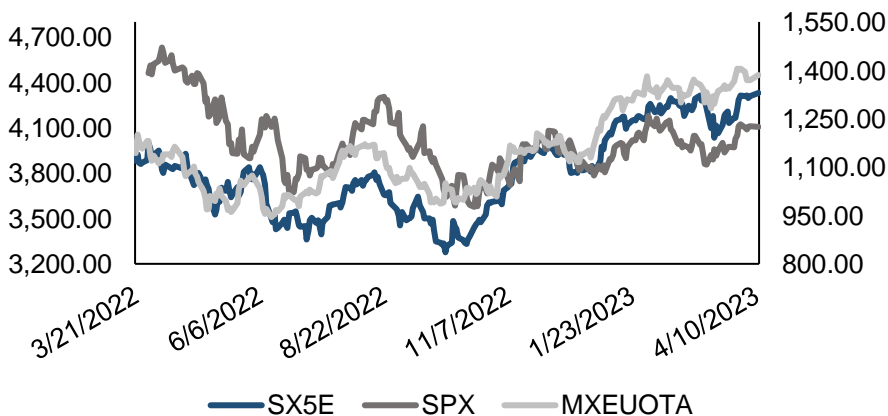
**Euro-Area Unemployment vs. SX5E Index | One-Year Chart**



**EU Services PMI vs. Change in Tourist Arrivals | 10.00-Month Chart**



**SX5E vs. SPX vs. MXEUOTA | One-Year Chart**



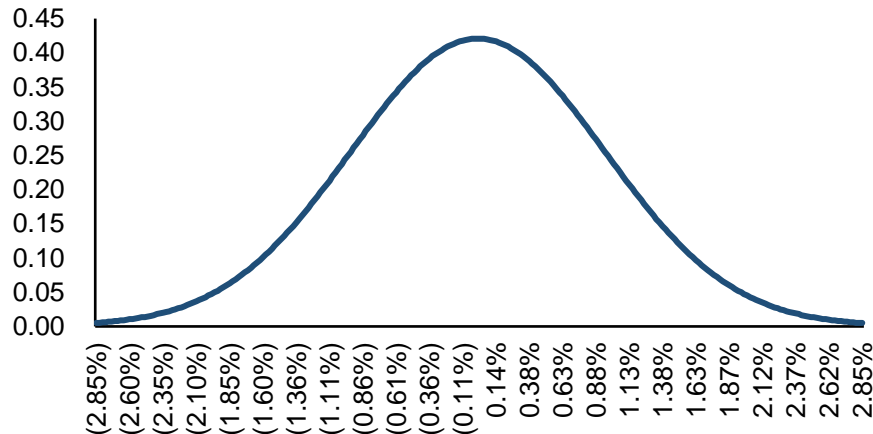
### Theoretical Edge Analysis

- While the Euro-Area Manufacturing PMI is still below 50.00, manufacturing output rose to the highest level since May of 2022, as unemployment fell to its lowest level since that same time period
  - Unemployment data further supports the notion of an incoming uptick in manufacturing in the Euro-Area
- On the back end of 2022, the service sector experienced its sharpest drop since 2013 (excluding pandemic driven declines), on the back of steepening losses for travel and tourism
- The S&P 500 has been outperformed by the Euro Stoxx 50 and MSCI Europe TALG in 2023 as the European indices have yet to realize the economic benefits of the reopening of China

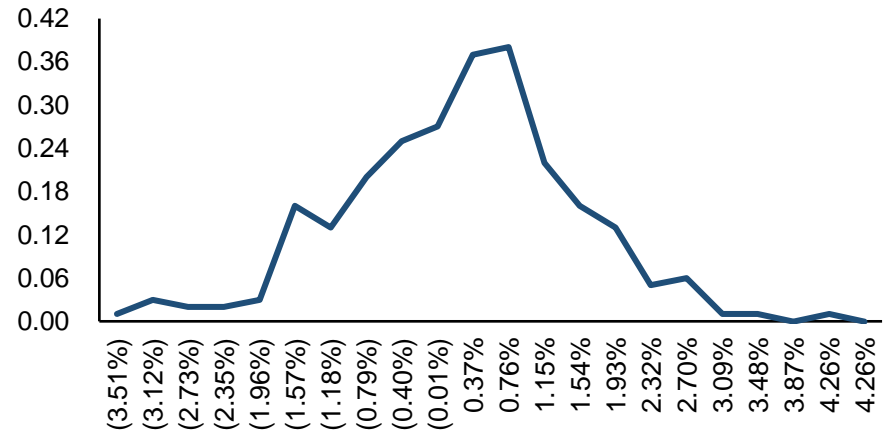
## V. Volatility Analysis

### Technical Bias & Fair Value

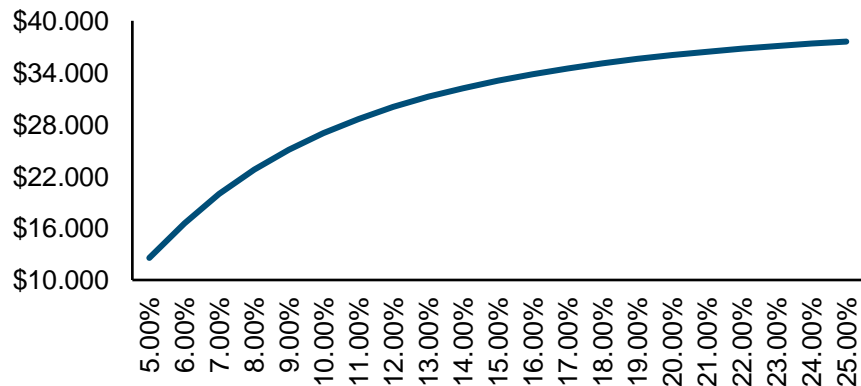
Expected Theoretical Daily Return Distribution



Historical Daily Return Distribution



Position Volatility Sensitivity



Theoretical Edge Analysis

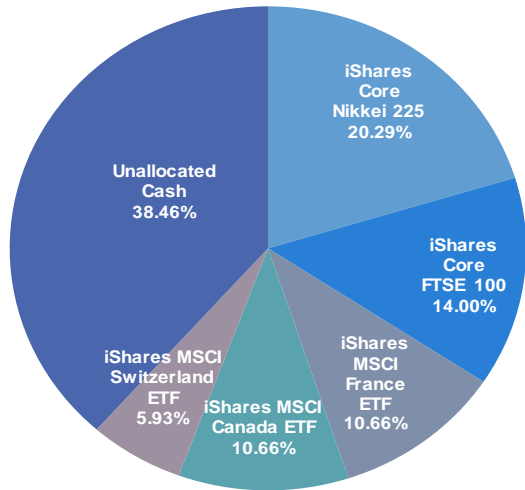
Asset Description	Option Premium
Theoretical Long Call	\$109.1380
<b>Actual Long Call</b>	\$106.2000
Theoretical Short Call	\$76.0530
<b>Actual Short Call</b>	\$68.3000
Theoretical Long Call Adj. for DV1	\$10,913.8000
<b>Actual Long Call Adj. for DV1</b>	\$10,620.0000
Theoretical Short Call Adj. for DV1	\$7,605.3000
<b>Actual Short Call Adj. for DV1</b>	\$6,830.0000
<b>Theoretical Edge (LC) Assuming 20.00 k Contracts</b>	\$1,836,250.0000
<b>Theoretical Edge (SC) Assuming 20.00 k Contracts</b>	(\$4,845,625.0000)
<b>Total Theoretical Edge</b>	(\$3,009,375.0000)



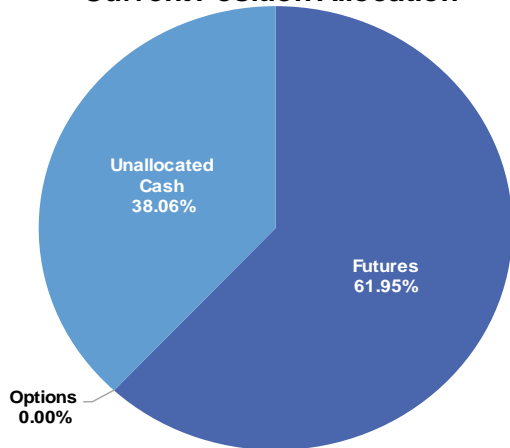
## V. Capital Allocation

### Capital Allocation

**Current Portfolio Allocation**



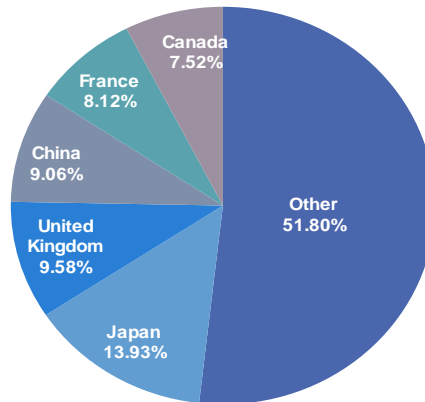
**Current Position Allocation**



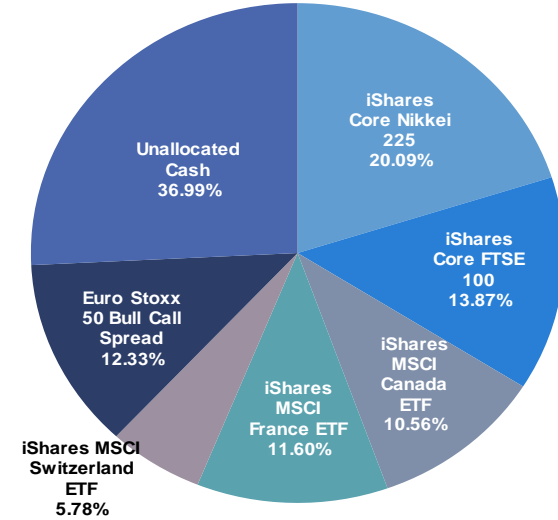
**Transaction Summary**

Ticker	Position Change	
	Contracts	Allocation
iShares Core Nikkei 225	0	\$0.00
iShares Core FTSE 100	0	\$0.00
iShares MSCI France ETF	0	\$0.00
iShares MSCI Canada ETF	0	\$0.00
iShares MSCI Switzerland ETF	0	\$0.00
Euro Stoxx 50 Bull Call Spread	+ 20000	(\$6,944,796.00)
<b>Allocation Change</b>		<b>(\$6,944,796.00)</b>

**Benchmark Allocation**



**Proposed Portfolio Allocation**



**Proposed Position Allocation**

