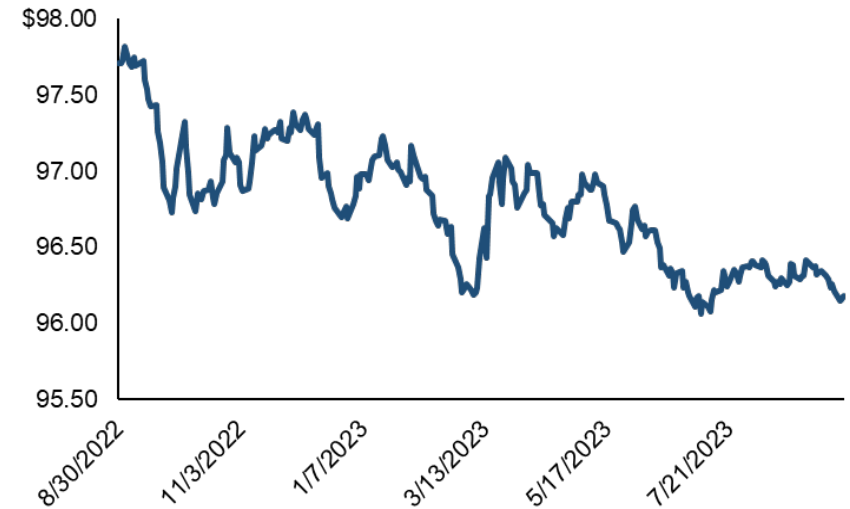


ERM4 | One-Year Price Chart



Position Details

- 3-Month Euribor Futures | ERM4
- Underlying Price: \$96.12
- Bull Call Spread
- Expiration Date: June 17, 2024

Interest Rate Products Sector

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I. Product & Position Overview

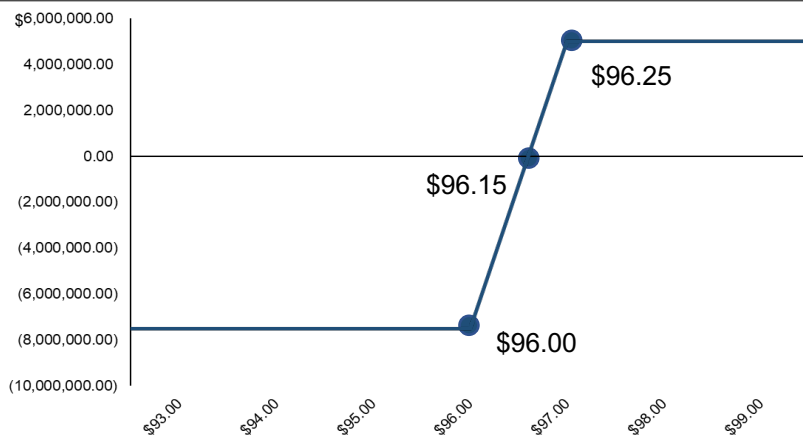
Product & Position Overview

Product Description

- **3-Month Euribor Futures**

- The Euro Interbank Offered Rate (Euribor) is a reference rate that is calculated based on the average interest rate at which a panel of European banks offer unsecured short-term funds on the inter-bank market
- 3-Month Euribor Futures (ERM4) reflect the market's expectations for the Euribor rate for the contract's respective months and are used as metrics for determining the bank's prediction for inter-bank short-term lending rates
- The Euribor rate is primarily driven by the European Central Bank's monetary policy action, market sentiment, as well as supply and demand for interbank loans

Payoff Diagram



Trade Breakdown

- **Bull Call Spread**

- This trade benefits from decreases in the 3-Month Euribor rate, or increases in the underlying futures contract price

- **Setup**

- We Buy – 50.00 ITM \$96.00 Puts (\$0.38) | ERM4
- We Sell – 50.00 OTM \$96.25 Puts (\$0.23) | ERM4
 - Max Profit: \$5,000,000.00
 - Max Loss: (\$7,500,000.00)

- **Expiration**

- Date: June 17, 2024

Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**

- **\$96.25 / \$96.18 / \$96.00**
- Breakeven – \$96.15

- **Methodology**

- The Sector believes that the underlying futures contract will trade up as the ECB shift to a more dovish sentiment because of poor economic performance in the last three months

- **Hedge Strategy**

- Should the ECB maintain its hawkish monetary policy action, the Sector will exit the position by reverse trading



II. Macroeconomic Thesis

Macroeconomic Thesis

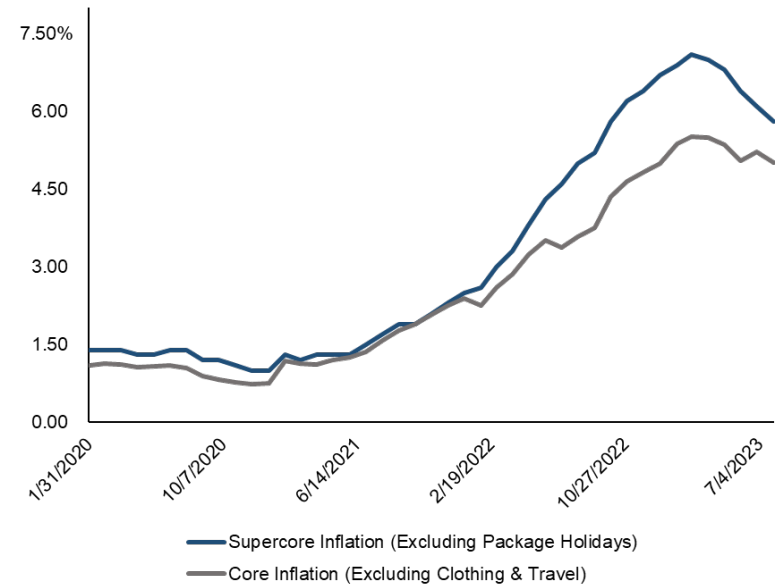
Macroeconomic Summary

- **Diminishing Market Confidence**
 - Confidence in the market has pivoted as Consumer Confidence has taken a downward pivot from (15.10) to (16.00) m/m from July to August
 - Unemployment forecasts are expected to increase from a rate of 6.40% to 7.40% by 2Q2024
 - Food inflation has been dramatically decreasing as it has fallen 5.90% from its high of 17.50%

- **Overstated Inflation Measures**
 - Two upward influences on service inflation and core inflation accounted for ~0.70% increase in core and even more for service inflation. A large base effect from a € nine-per-month public transport ticket German subsidy introduced in June of last year
 - The effects should be reversed in the coming months as the subsidy is set to end this month and as upward pressures from travel services unwind

- **Decline in Euro lending**
 - Bank lending to households in the E.A. rose by 1.30% y/y. This is the lowest growth rate since November 2015, as the deceleration in credit demand persists.
 - Private sector growth which contains non-financial corporations and households, cooled 1.60%. Being the weakest pace since June 2016FY

Supercore Inflation v. Core Inflation | Three-Year Chart



Market Pros & Cons

- Growing bankruptcies would cause an early dovish pivot
- Producer prices continue to fall to a one-year low
- Surging oil prices keep inflation higher and growth lower
- Excess liquidity goes unaddressed leading to higher rates



III. Risk Analysis

Risk Analysis

Directional & Magnitude Risk

- **Delta Analysis**

- The trade has a Delta value of 0.53
- The trade benefits from bullish movements in the underlying futures contract, which indicates a lower implied target range for the 3-Month Euribor rate

- **Gamma Analysis**

- The trade has a Gamma value of 0.02
- Gamma is somewhat insignificant for the duration as a call is being bought and sold to enter the position

Implied Volatility Risk

- **Vega Analysis**

- The trade has a Vega value of 0.32
- The trade is long volatility, as implied volatility has been underpriced due to overstated inflation and uncertainty regarding future policy from the ECB
- Lower economic activity will likely cause a decrease demand for loans keeping downward pressure on the rate
- The implied volatility for each leg of the trade is 21.00%, but a projected volatility of 25.00% was used

Time Risk

- **Theta Analysis**

- The trade has a Theta value (0.05)
- Theta is negative for this trade as the premium for the short call is significantly lower than that of the long call
- The lower Theta value is due to the longer duration of the trade, as time value decays exponentially the longer the trade remains out of the money

Interest Rate Risk

- **Rho Analysis**

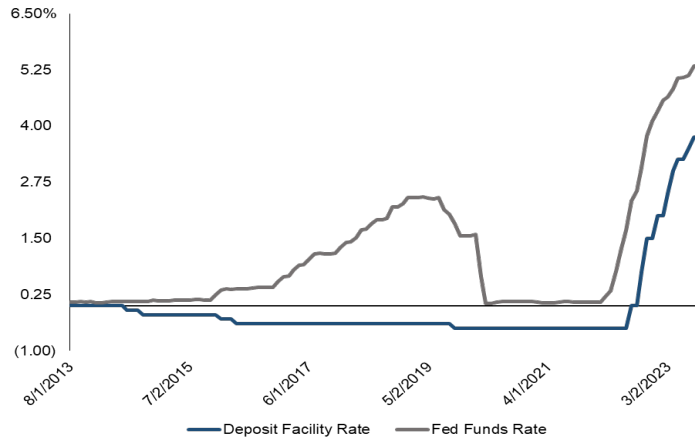
- The trade has a Rho value of (0.06)
- The value of Rho in the trade is somewhat important as a decrease in interest rates would be beneficial for the trade, due to the underlying futures contract trade up



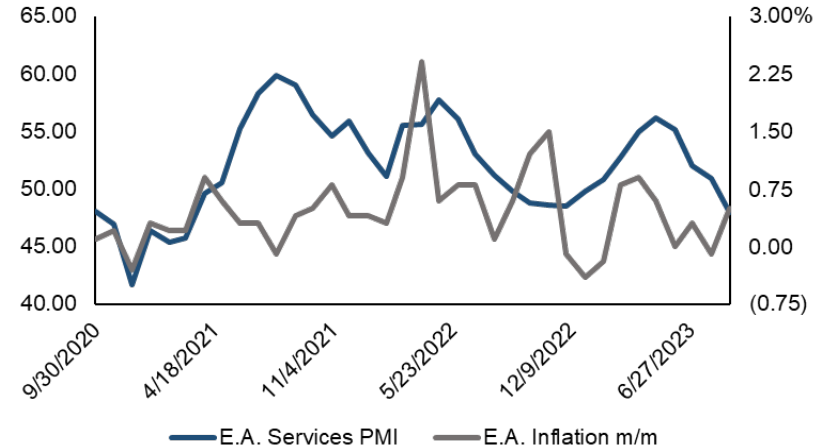
IV. Technical Bias & Fair Value

Technical Bias & Fair Value

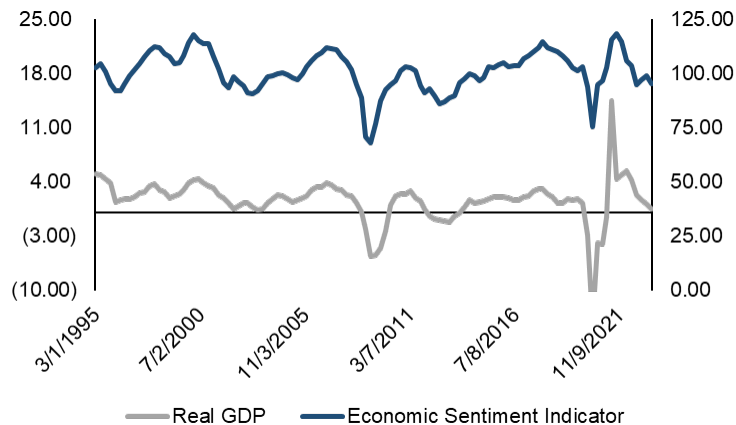
Deposit Facility Rate v. Fed Funds Rate | 10.00-Year Chart



E.A. Services PMI v. E.A. Inflation m/m | Three-Year Chart



Real GDP v. Economic Sentiment Indicator | 28.00-Year Chart



Synopsis

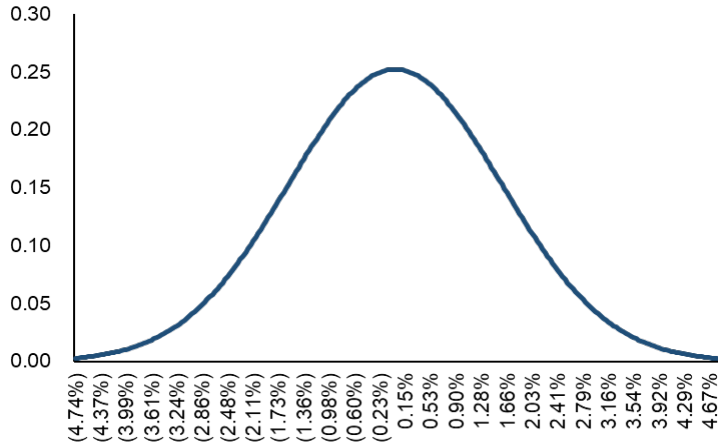
- The ECB's monetary policy decisions tend to be more dovish than the Fed's due to the lack of economic resilience the E.A. has compared to the U.S. In 2014-2022 the ECB had negative rates
- The E.A. Services PMI and E.A. Inflation m/m have highlighted a historical relationship in the past three years showing a lagging effect from Eurozone Inflation behind the E.A. Services PMI giving the Interest Rate Products Sector insight into future E.A. Inflation
- The Economic Sentiment Indicator in the Euro Area declined for the fourth consecutive month to 93.30 in August 2023FY, falling short of market expectations of 93.70. Bearing a slow in consumer confidence



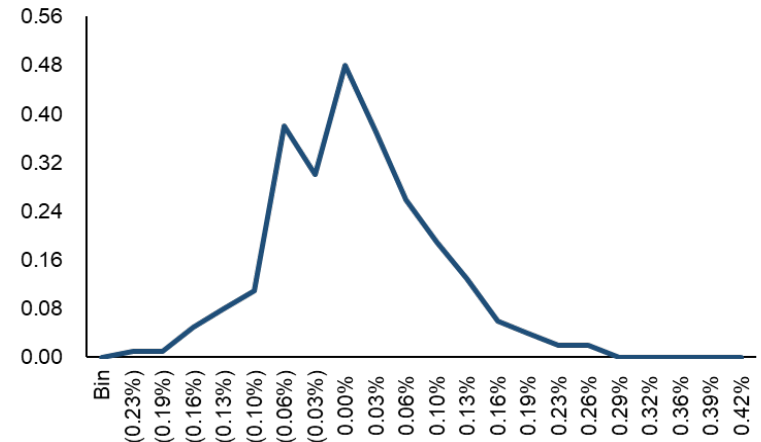
V. Volatility Analysis

Volatility Analysis

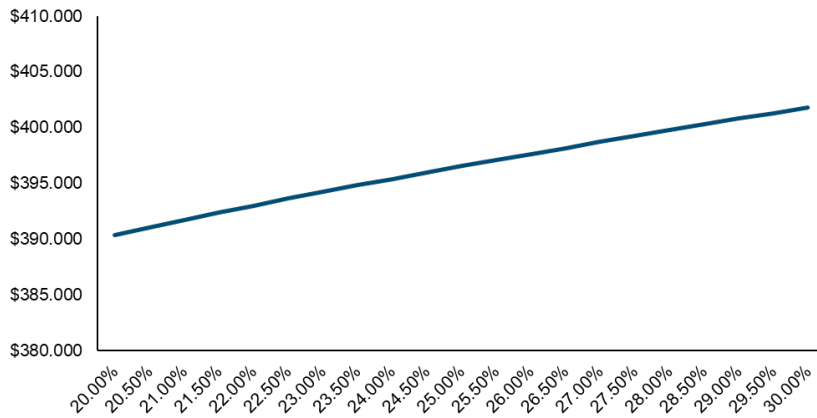
Expected Theoretical Daily Return Distribution



Historical Daily Return Distribution



Position Volatility Sensitivity



Theoretical Edge Analysis

Asset Description	Option Premium
Theoretical Long Put	\$7.9700
Actual Long Put	\$0.3800
Theoretical Short Put	\$7.8600
Actual Short Put	\$0.2300
Theoretical Long Put Adj. for DV1	\$797.0000
Actual Long Put Adj. for DV1	\$38.0000
Theoretical Short Put Adj. for DV1	\$786.0000
Actual Short Put Adj. for DV1	\$23.0000
Theoretical Edge (LP) Assuming 100.00 k Contracts	\$4,743,750.0000
Theoretical Edge (SP) Assuming 100.00 k Contracts	(\$4,768,750.0000)
Total Theoretical Edge	(\$25,000.0000)



VI. Capital Allocation

Capital Allocation

