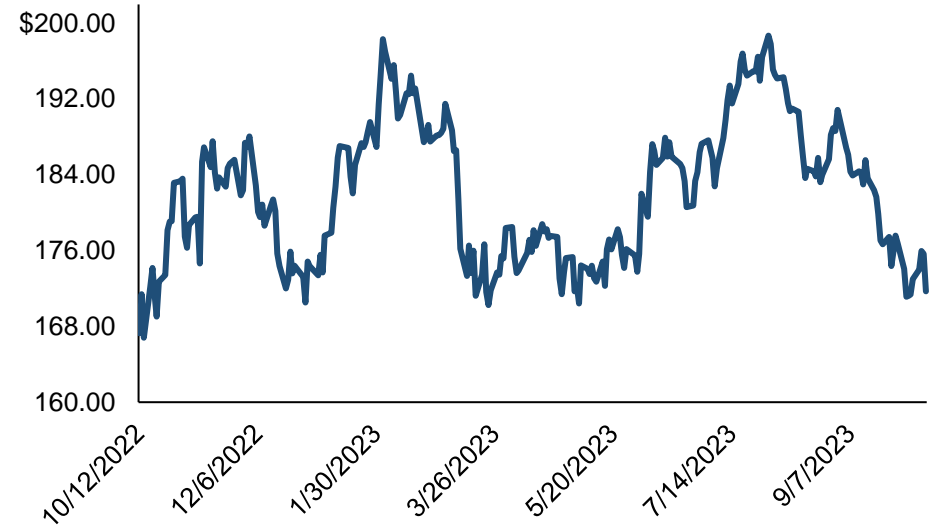


iShares Russell 2000 ETF | One-Year Price Chart



Equity Derivatives Sector

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Position Details

- iShares Russell 2000 ETF | IWM US Equity
- Underlying Price: \$172.70
- Bear Put Spread
- Expiration Date: March 15, 2024

Table of Contents

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



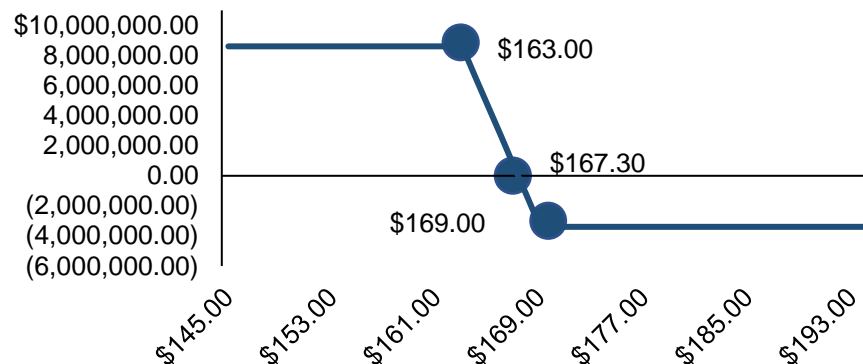
I. Product & Position Overview

Product & Position Overview

Product Description

- **iShares Russell 2000 ETF**
 - The iShares Russell 2000 ETF, or IWM, tracks the Russell 2000 Index. The Russell 2000 index is made of the smallest 2000 companies that make up the Russell 3000 Index. The index provides exposure to small-cap companies with a median market capitalization of 2.96bn
 - IWM tracks a broad-based, market cap-weighted index that is adjusted by each company's number of shares outstanding. The member's stock price as well as number of tradable shares influence the ETF. The ETF holds 1.99k stocks
- **Sub-Industry Allocation**
 - Industrials | 17.42%
 - Financials | 16.35%
 - Health Care | 14.05%

Payoff Diagram



Trade Breakdown

- **Strategy**
 - This trade will benefit from bearish price movements in the underlying index
- **Setup**
 - We Buy – 20.00k OTM \$169 Puts | IWM US Equity
 - We Sell – 20.00k OTM \$163 Puts | IWM US Equity
 - Max Loss –(\$3,400,000.00)
 - Max Profit –\$8,600,000.00
- **Expiration**
 - Date: March 15, 2024

Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**
 - **\$163.00 / \$167.30 / \$169.00**
 - Breakeven – \$167.30
- **Methodology**
 - The bull case and base case target would represent a respective ~5.61% and ~3.13% decrease in the ETF
- **Hedge Strategy**
 - If the underlying ETF increases in price. The Sector will look to reverse trade by selling puts at \$169.00 and buying puts at \$163.00

II. Macroeconomic Thesis

Macroeconomic Thesis

Macroeconomic Summary

• Small cap companies exposure to higher rates

- Small cap companies pay a floating rate on 30.00% of their debt while S&P 500 companies only pay a 6.00% rate
- Companies in the ETF heavily rely on bank lending to fund operations. According to the recent SLOOS survey credit conditions will continue to tighten further
- Interest rate expenses for small cap companies recently hit a record high while interest incomes have barely risen

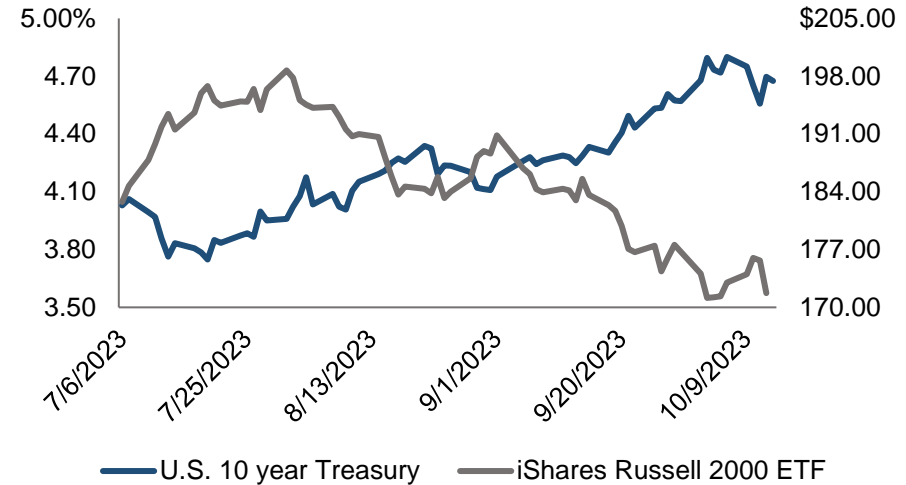
• Economic slowdown at the end of 4Q2023 and into 1Q2024

- Consumer spending cooling quickly as wage growth cools, student loans are repaid, and excess savings run out
- The ETF has much more exposure to commercial real Estate as well as a lack of exposure to AI
- Small Cap companies are more reactive to economic turmoil as they are smaller and have less pricing power

• Higher Treasury yields across the yield curve

- The 10-year being at 4.69% makes it more expensive for companies to issue debt. Small Caps will have to offer a yield significantly higher due to their credit rating
- A higher 10-year rate directly influences mortgage loans, auto loans, and consumer loans. U.S. mortgage rates are at 26.00 year highs
- Higher rates at the front end of the curve have led to 5.00% earnings from money market funds who are investing in T-bills and the repo market

10-year Treasury Yield vs. IWM | Three Month Price Chart



Market Pros & Cons

- Government shutdown hurts market sentiment
- Geopolitical tensions rise due to war in Israel
- Cooling inflation prints lead the fed to cut rates sooner
- U.S companies beat estimates in the 3Q2023 earnings season



III. Risk Analysis

Risk Analysis

Directional & Magnitude Risk

- **Delta Analysis**
 - The Delta value for this trade is (0.0756)
 - Theoretically, for every \$1.00 change in the underlying ETF, the options contracts will gain or lose \$0.075
- **Gamma Analysis**
 - This trade has a negative Gamma value of (0.0012)
 - The trade has a near zero Gamma because the delta is little changed due to the offsetting legs of the trade

Implied Volatility Risk

- **Vega Analysis**
 - The trade has a Vega value of 0.0460
 - Implied volatility input for the trade is 22.00%
 - Vega is positive for long options while it is negative for short options, regardless of whether it is a call or put
 - Since this trade consists of one long put and one short put, the volatility offsets each other making the Vega value relatively small. The Vega is slightly positive because the value of the long put leg is larger than the short put leg

Time Risk

- **Theta Analysis**
 - This trade has a Theta value of (0.0059)
 - Since this trade is long one option and short another, the overall effects of time decay will offset each other which is why this trades Theta is relatively small
 - This trade has a net negative Theta due to the long put's Theta being negative and the short put having a smaller positive theta value

Interest Rate Risk

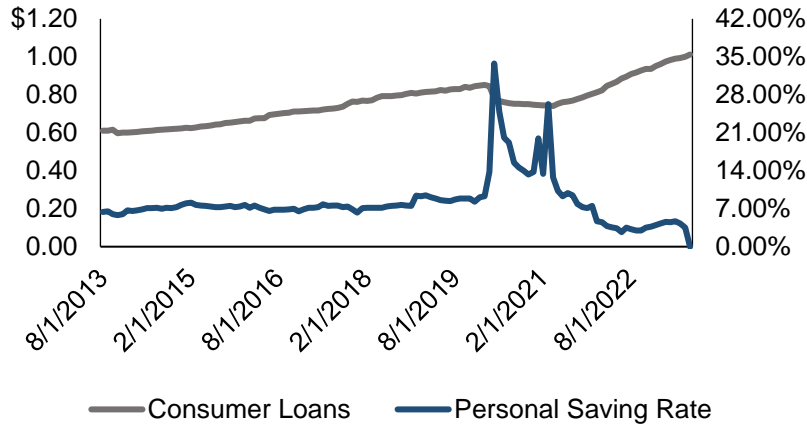
- **Rho Analysis**
 - The Rho value for this trade is (0.0911)
 - Rho is negative because the trades premium paid is larger than the premium received. Therefore, an increase in the risk-free rate hurts this trade because the opportunity to invest in a risk-free asset goes away
 - Rho will likely remain the same throughout the trade. Rho trends closer to zero as time moves toward expiration and further from zero as the put becomes deeper ITM



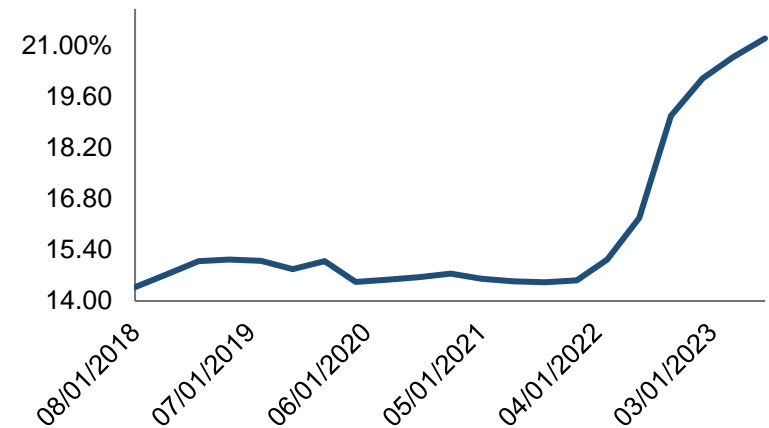
IV. Technical Bias & Fair Value

Technical Bias & Fair Value

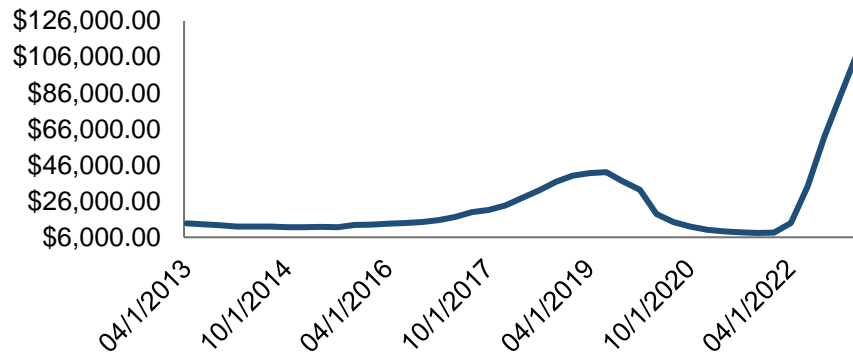
Consumer Loans (trillions) vs. Personal Savings Rate | Ten-Year Chart



Commercial Bank Interest Rate on Credit Card Plan | Five-Year Chart



Income and Expense: Total Interest Expense (millions) | Ten-Year Chart



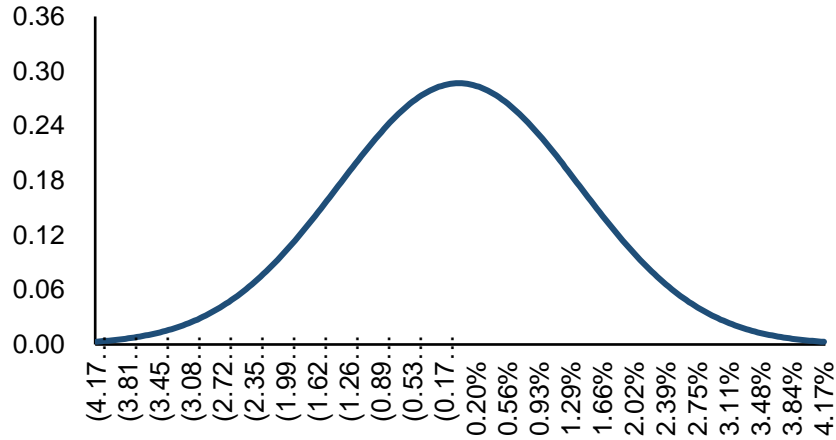
Synopsis

- Consumers have continued to take on credit and loan payments have surpassed one trillion dollars. The personal savings rate has fell to 4.10% below pre-pandemic averages of 7.60%
- Credit Card debt is now at all time record of 1.20T dollars and credit card debt increased 14.00% last month. Consumers are continuing to borrow using revolving debt to fund robust spending. That credit will have to be repaid at record rates
- Interest expenses are higher than they were just before the financial crisis. Consumers and small cap companies will both struggle to afford these higher expenses

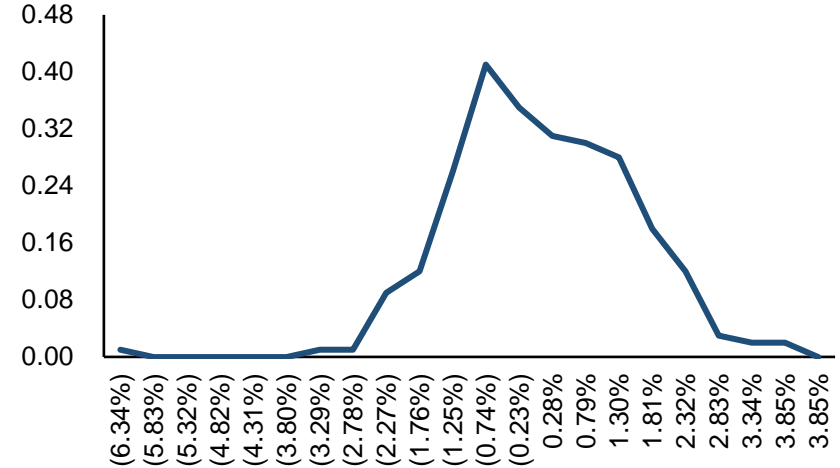
V. Volatility Analysis

Volatility Analysis

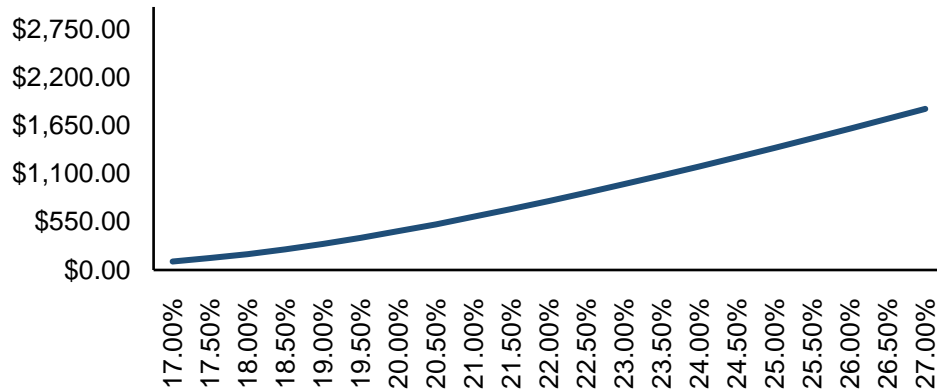
Expected Theoretical Daily Return Distribution



Historical Daily Return Distribution



Position Volatility Sensitivity



Synopsis

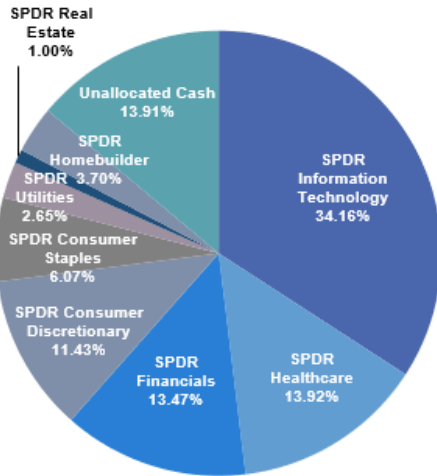
| Asset Description | Option Premium |
|--|------------------|
| Theoretical Long Put | \$7.7200 |
| Actual Long Put | \$6.1800 |
| Theoretical Short Put | \$5.2700 |
| Actual Short Put | \$4.4800 |
| Theoretical Long Put Adj. for DV1 | \$772.0000 |
| Actual Long Put Adj. for DV1 | \$618.0000 |
| Theoretical Short Put Adj. for DV1 | \$527.0000 |
| Actual Short Put Adj. for DV1 | \$448.0000 |
| Theoretical Edge (LP) Assuming 100.00 k Contracts | \$962,500.0000 |
| Theoretical Edge (SP) Assuming 100.00 k Contracts | (\$493,750.0000) |
| Total Theoretical Edge | \$468,750.0000 |



V. Capital Allocation

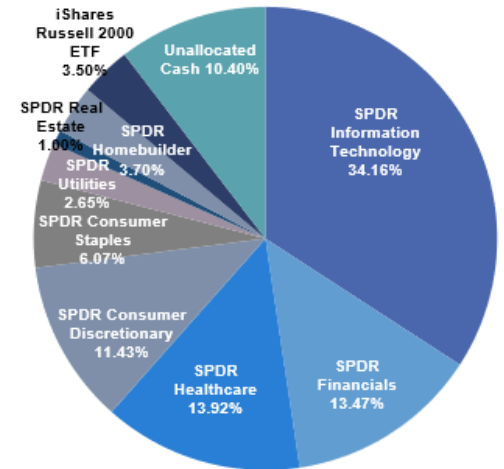
Capital Allocation

Current Portfolio Allocation

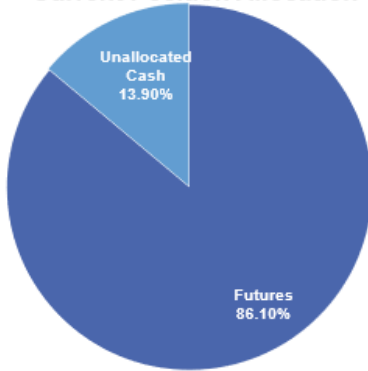


| Transaction Summary | | |
|-----------------------------|-----------------|------------------|
| Ticker | Position Change | |
| | Contracts | Allocation |
| SPDR Consumer Discretionary | | \$10,875,106.87 |
| SPDR Consumer Staples | | \$520,929.78 |
| SPDR Financials | | \$199,407,292.92 |
| SPDR Healthcare | | \$32,919,099.80 |
| SPDR Homebuilders | | \$3,275,740.00 |
| SPDR Information Technology | | \$32,919,649.89 |
| SPDR Real Estate | | \$967,960.00 |
| SPDR Utilities | | \$2,557,865.35 |
| iShares Russell 2000 E | + 20000 | \$3,400,000.00 |
| Allocation Change | | (\$3,400,000.00) |

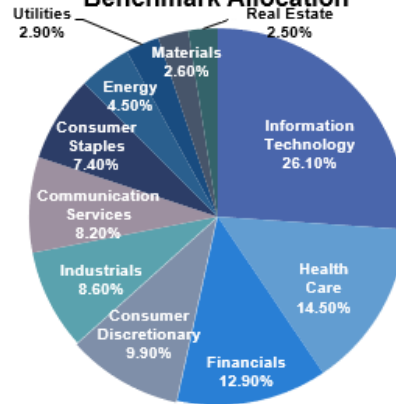
Proposed Portfolio Allocation



Current Position Allocation



Benchmark Allocation



Proposed Position Allocation

