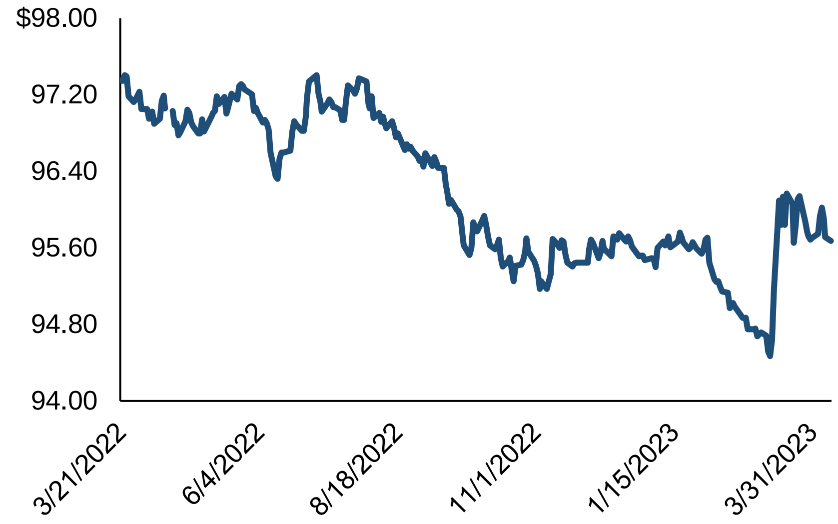
# The Asset Management Group

## Pennsylvania State University

### SFRZ3 | One-Year Price Chart




### Position Details

- 3-Month SOFR Futures | SFRZ3
- Underlying Price: $95.67
- Bear Put Spread
- Expiration Date: December 15, 2023

### Interest Rate Products Sector

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I. Product & Position Overview

# Product & Position Overview

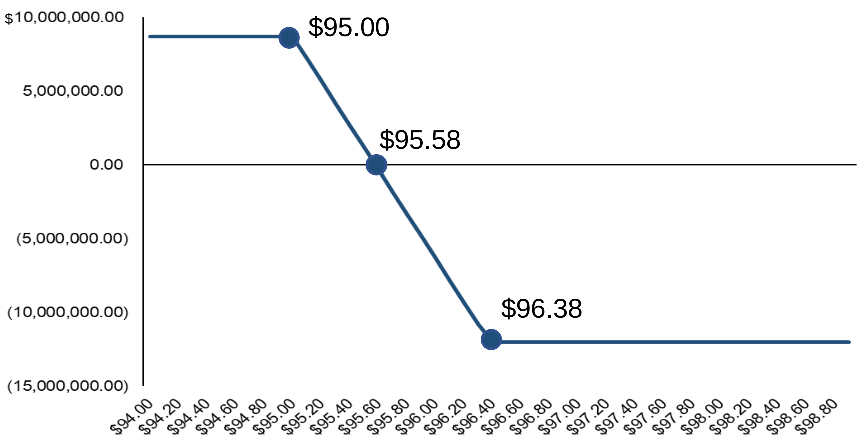
## Product Description

- **3-Month SOFR Futures**
  - The Secured Overnight Financing Rate (SOFR) is the benchmark interest rate for overnight lending on secured transactions, back by U.S. Treasuries, in the repo market
  - 3-Month SOFR Futures (SFRZ3) reflect the market's expectations for the SOFR rate for the contracts respective months, and are often used as metrics for determining the market's prediction for future interest rate hikes
  - The SOFR rate is primarily driven by the Federal Reserve's monetary policy action, overall liquidity conditions, as well as macroeconomic factors, such as the unemployment rate

## Trade Breakdown

- **Bear Put Spread**
  - This trade benefits from increases in the SOFR, or decreases in the underlying futures contract price
- **Setup**
  - We Sell – 6,000.00 OTM $95.00 Puts ($0.24) | SFRZ3
  - We Buy – 6,000.00 ITM $96.38 Puts ($1.04) | SFRZ3
    - Max Profit: $8,700,000.00
    - Max Loss: ($12,000,000.00)
- **Expiration**
  - Date: December 15, 2023

## Payoff Diagram




## Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**
  - **$96.38** / **$95.75** / **$95.00**
  - Breakeven – $95.58
- **Methodology**
  - The Sector believes that the underlying futures contract will trade down as the Federal Reserve continues its hawkish sentiment as a result of overstated banking sector fears
- **Hedge Strategy**
  - Should the Federal Reserve take a dovish monetary policy pivot, the Sector will exit the position by reverse trading

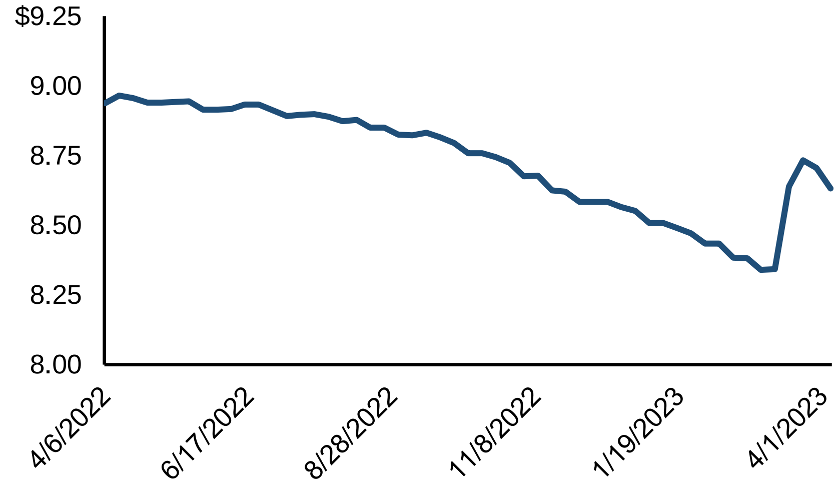
II. Macroeconomic Thesis

# Macroeconomic Thesis

### Macroeconomic Summary

- **Overpriced Bank Liquidity Fears**
  - In response to the SVB Financial collapse, the Federal Reserve created the Bank Term Funding Program, which lends to Banks, using securities valued at par as collateral
  - The loans are quoted at an interest rate of a one-year tenor OIS + 10.00 bps, and the facility reversed months of balance sheet contraction, which further indicates that the Federal Reserve will take more aggressive policy action
  - The facility allows the Federal Reserve to hike interest rates by more than the market is pricing in as banks can secure the capital needed to fund short-term deposits
- **Persistent Inflationary Pressures**
  - Rent prices continue to remain high, leading investors to believe that inflation will be sticky, even as one-year inflation expectations fell to ~4.20% in February of 2023FY
  - The current 10-Year TIPS spread has decreased to ~2.25% from year-long highs of ~3.02%, but will likely stabilize or begin increasing as dovish sentiment begins to subside
  - The tightening TIPS spread could potentially be skewed as dovish sentiment coupled with investors seeking safer investments as a result of the broader SVB collapse
- **Disruption in the Flow of Institutional Capital**
  - Because of the Bank Term Funding Program, large banks are less likely to utilize repo markets for secured funding due to collateral securities not being valued at par
  - This will drive lower volatility in repo, and therefore, SOFR markets, as banks will use wholesale unsecured funding

### Federal Reserve Balance Sheet (T) | One-Year Chart




### Market Pros & Cons

- Inflation continues to remain sticky throughout 2023FY
- Overall unemployment and consumer spending remain strong
- Future bank runs lead to the collapse of more regional banks
- Inflationary pressures ease which causes a dovish policy shift

# III. Risk Analysis

# Risk Analysis

### Directional & Magnitude Risk

- **Delta Analysis**
  - The trade has a Delta value of (0.4003)
  - The trade benefits from bearish movements in the underlying futures contract, which indicates a higher implied target range for the federal funds rate
- **Gamma Analysis**
  - The trade has a Gamma value of (0.0015)
  - Gamma is not significant for the duration of the trade as a put is being bought and sold to enter the position

### Time Risk

- **Theta Analysis**
  - The trade has a Theta value 0.0003
  - Theta is not incredibly significant for the trade, and is slightly positive because the premium paid for the long put exceeds the net premium received from the short put
  - The Sector is a net payer of the premium to enter the trade, so the trade will become more profitable as time passes

### Implied Volatility Risk

- **Vega Analysis**
  - The trade has a Vega value of (0.0015)
  - The trade is short volatility, as implied volatility has been largely overpriced due to the SVB collapse and uncertainty regarding future policy from the Federal Reserve
  - Lower repo market activity will likely cause the implied volatility on the contracts to decrease in the future
  - The implied volatility for each leg of the trade is ~1.97%, but a projected volatility of 1.60% was used

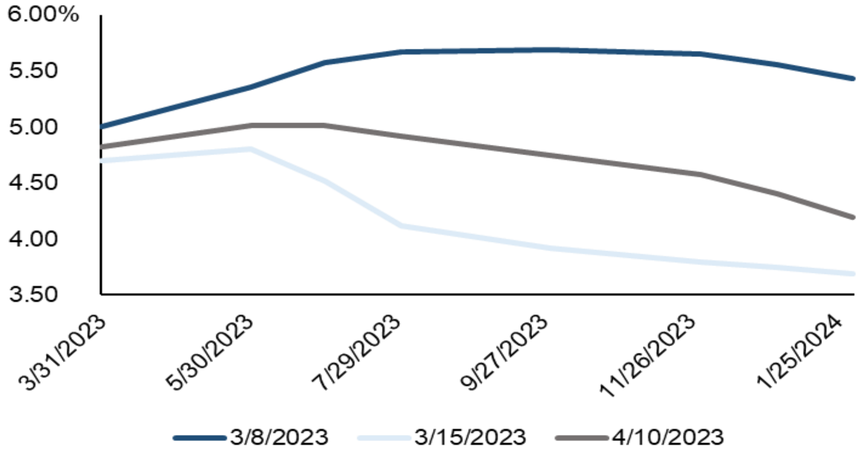
### Interest Rate Risk

- **Rho Analysis**
  - The trade has a Rho value of (0.0046)
  - The value of Rho in the trade is somewhat important as an increase in interest rates would be beneficial for the trade, due to the underlying futures contract trade down
  - Short-term U.S. Treasury Yields are highly correlated with movements in the target range for the federal funds rate

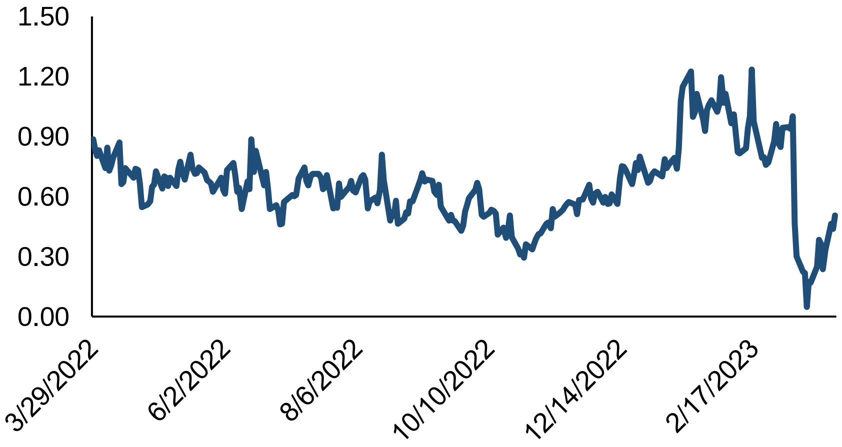
IV. Technical Bias & Fair Value

# Technical Bias & Fair Value

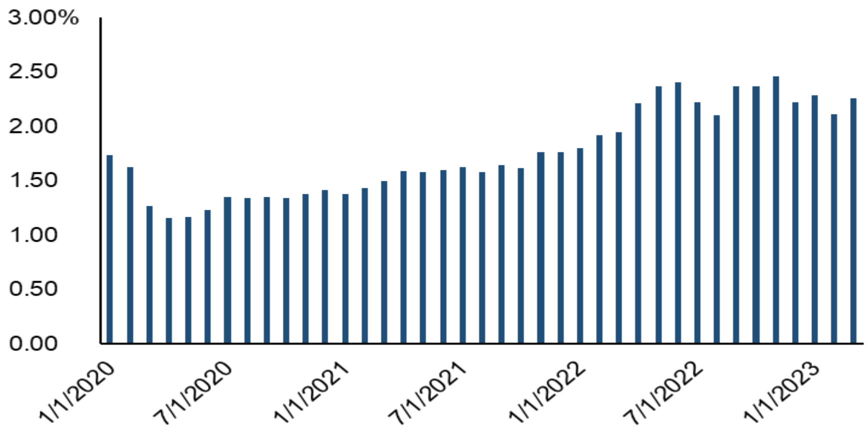
### Evolution of Implied Fed-Funds Rate | One-Month Chart




### Systemic Risk Indicator | One-Year Chart




### 10-Year Inflation Expectations | Three-Year Chart



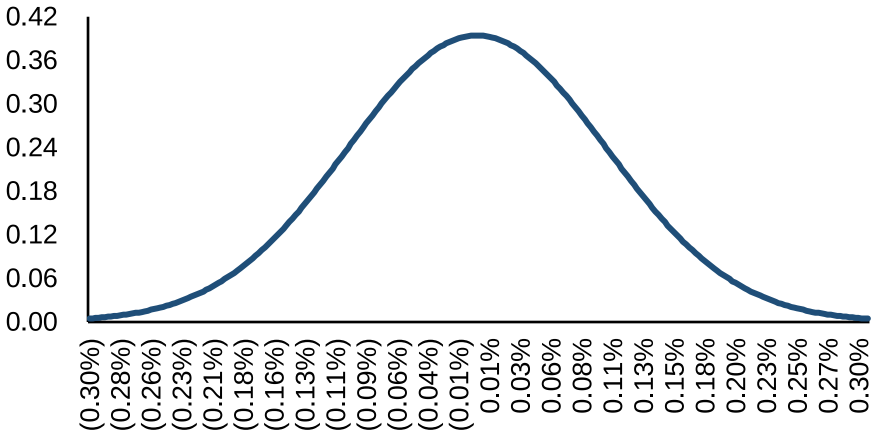

### Synopsis

- Due to the failure of SVB, the Fed's monetary policy took a sudden dovish turn but as banking pressures have started to alleviate, forecasts for the fed-funds rate continues to shift back to pre-SVB predictions, as these predictions indicated a more hawkish stance
- After witnessing historic gains in inflation in tandem with the fastest increase in interest rates, inflation expectations continue to remain cyclical in the long-term, with prevailing secular drivers
- The systemic risk indicator provided by the Cleveland Fed reflected a sharp decline in the spread of average distance-to-default and the portfolio distance-to-default which signified increased bank risk

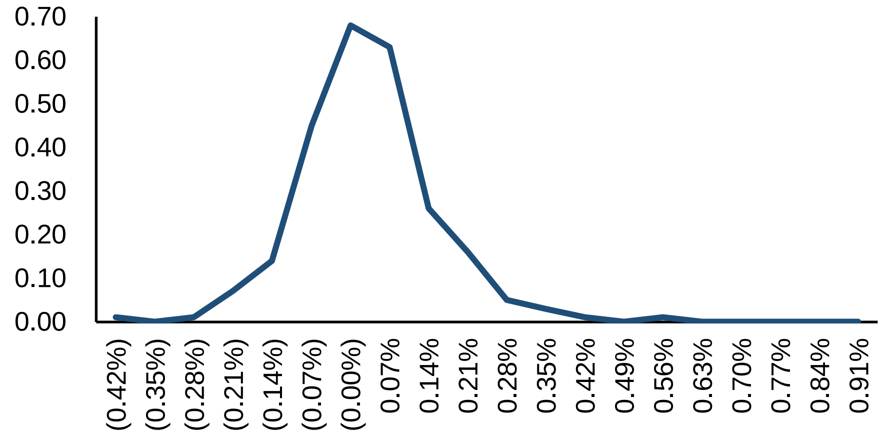
V. Volatility Analysis

# Volatility Analysis

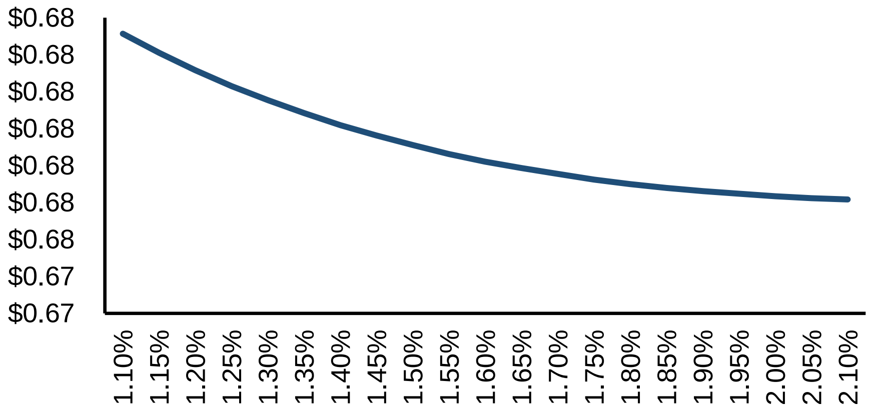
### Expected Theoretical Daily Return Distribution




### Historical Daily Return Distribution




### Position Volatility Sensitivity



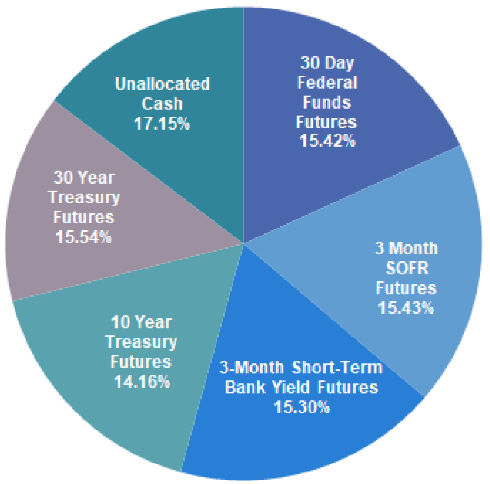

### Theoretical Edge Analysis

| Asset Description | Option Premium |
|---|---|
| Theoretical Long Put | $0.2300 |
| **Actual Long Put** | $0.2350 |
| Theoretical Short Put | $0.9100 |
| **Actual Short Put** | $1.0400 |
| Theoretical Long Put Adj. for DV1 | $23.0000 |
| **Actual Long Put Adj. for DV1** | $23.5000 |
| Theoretical Short Put Adj. for DV1 | $91.0000 |
| **Actual Short Put Adj. for DV1** | $104.0000 |
| **Theortical Edge (LP) Assuming 6.00 k Contracts** | ($3,000.0000) |
| | - |
| **Theortical Edge (SP) Assuming 6.00 k Contracts** | $78,000.0000 |
| **Total Theoretical Edge** | $75,000.0000 |

VI. Capital Allocation

# Capital Allocation

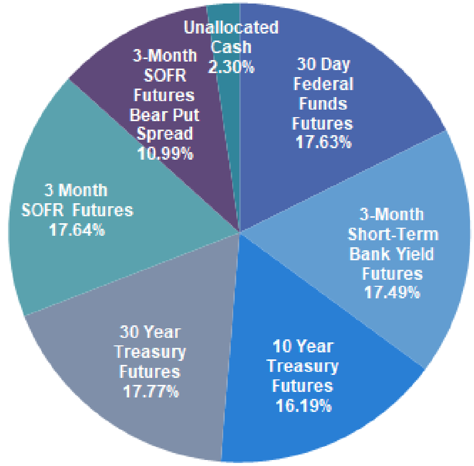
## Current Portfolio Allocation



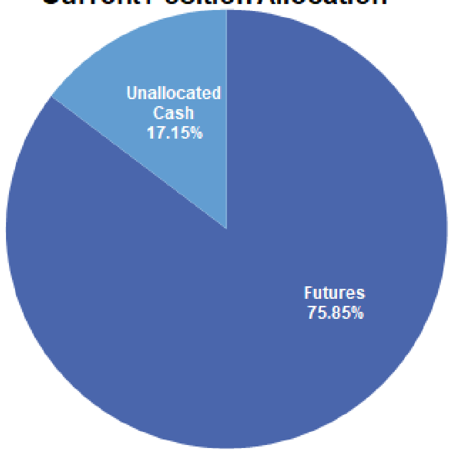

## Transaction Summary

| Ticker | Position Change: Contracts | Position Change: Allocation |
|---|---|---|
| 10 Year Treasury Futures | 0 | $0.00 |
| 3 Month SOFR Futures | 0 | $0.00 |
| 30 Day Federal Funds Futures | 0 | $0.00 |
| 30 Year Treasury Futures | 0 | $0.00 |
| 3-Month Short-Term Bank Yield Futures | 0 | $0.00 |
| 3-Month SOFR Futures Bear Put Spread | + 6000 | $12,000,000.00 |
| Allocation Change | | $12,000,000.00 |

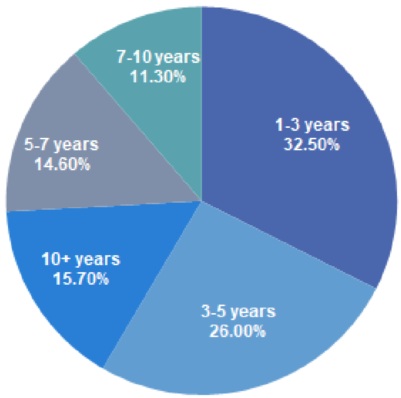
## Proposed Portfolio Allocation




## Current Position Allocation




## Benchmark Allocation




## Proposed Position Allocation