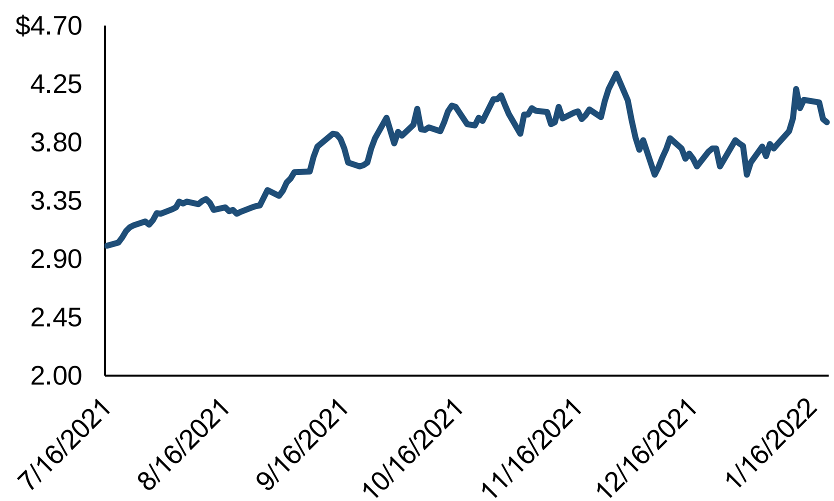
Natural Gas | Six-Month Price Chart



Position Details

- Natural Gas | NGU22
- Underlying Price: $3.83
- Bull Call Spread
- Expiration Date: August 27, 2022

Energy Sector

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I. Product & Position Overview

Product & Position Overview

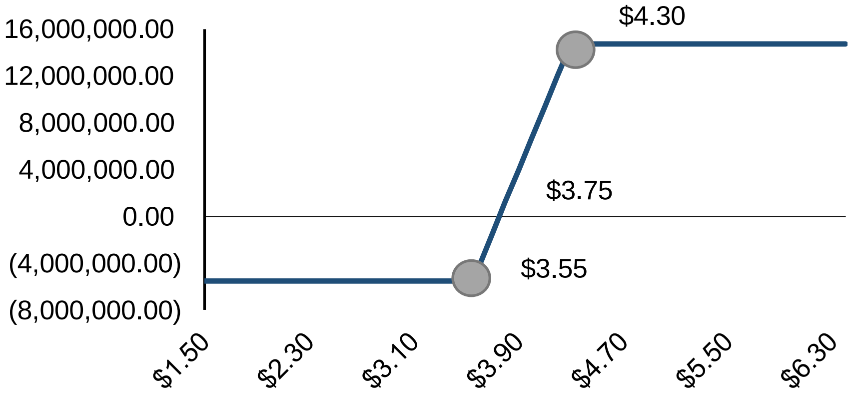
Product Description

- **Natural Gas**
  - Natural gas is a non-renewable hydrocarbon, and is used for heating, electricity generation, transportation, and production
  - It is the cleanest burning fossil fuel contributing about 32.00% of total United States energy use in 2019
- **Major Exporters and Importers of Natural Gas**
  - Exporters (bn cubic meters)
    - Russia (199.93), United States (149.54), and Qatar (143.70)
  - Importers (bn cubic meters)
    - Germany (119.50), Japan (116.60), and China (97.63)

Trade Breakdown

- **Bull Call Spread**
  - This trade benefits from upward price movement to the upper strike while providing downside protection
- **Setup**
  - We Buy – 2700.00 ITM $3.55 Calls (0.713) | NGU22C
  - We Sell – 2700.00 OTM $4.30 Calls (0.509) | NGU22C
  - Max Profit: $14,742,000.00
  - Max Loss: ($5,508,000.00)
- **Expiration**
  - Date: 08/27/2022

Payoff Diagram



Exit Strategy & Potential Hedge Strategy

- **Bull Base & Bear Case**
  - **$6.31** / $3.75 / **$2.60**
  - Breakeven – $3.75
- **Methodology**
  - The methodology for our price targets are due to global supply and demand where natural gas traded relative to overall availability of natural gas
- **Hedge Strategy**
  - The sector will monitor the price of natural gas and reverse trade if adverse price action occurs

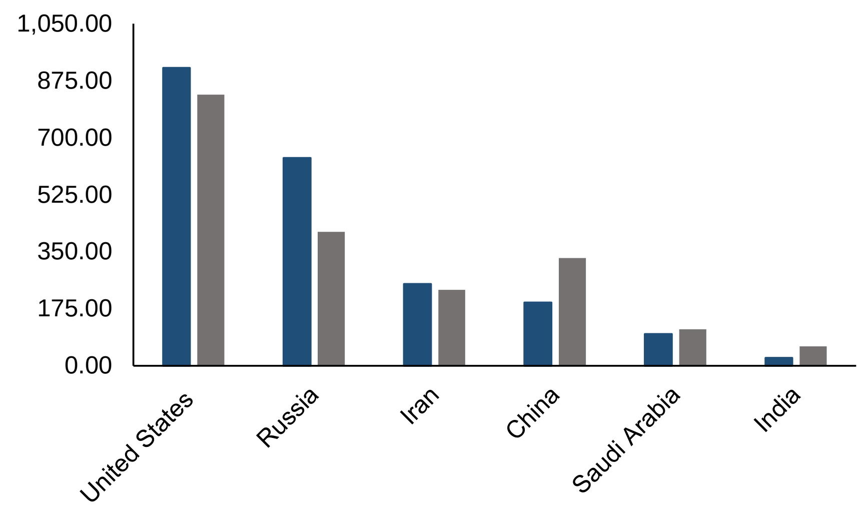
I. Macroeconomic Thesis

Macroeconomic Thesis

Macroeconomic Summary

- **Increasing Natural Gas Demand and Low Supply**
  - Based on U.S. Energy Information Administration (EIA) estimates, inventories of natural gas declined 206.00 Bcf during the second week of January, despite expectations of a 173.00 Bcf draw. This is higher than the 167.00 Bcf five-year average draw signaling historically low supply
    - For the week ending January 14th, U.S. working natural gas stocks amounted to 2,810.00 Bcf, 7.00% lower than the year-ago level
    - With continued uncertainty about commissioning of the Nord Stream 2 Pipeline, natural gas supply may be further disrupted
- **LNG Demand Remains Elevated**
  - Due to Europe and Asia competing for the same LNG supply, prices have surged, which has led to Europe becoming energy-dependent. U.S. production has also slowed to start 2022, decreasing 2.00 Bcf
  - Demand for LNG has increased each year since 2012, increasing 40.00% over the last five years, with natural gas being a major substitute for coal
- **Geopolitical Tensions Between Russia and the West**
  - Due to a standoff between Russia and the West over Ukraine, Russia is intentionally undersupplying Natural Gas to Europe causing prices to stay elevated
  - The IEA has warned that the current storage deficit in the EU is largely due to Gazprom
    - The Russian gas company Gazprom has reduced exports to Europe by 25.00% y/y

Natural Gas Production vs. Consumption Per Country (Bcf)



Market Pros & Cons

- Strong Demand For Natural Gas During Summer
- Cleaner Alternative to Fossil Fuels
- Warmer February Weather
- Weaker Dollar Promoting Natural Gas Exports

I. Risk Analysis

Risk Analysis

Directional & Magnitude Risk

- **Delta Analysis**
  - This trade has a positive Delta of 0.203886 because as the underlying increases the price of the calls will increase
- **Gamma Analysis**
  - The spread has a slightly negative gamma at (0.01835)
  - Gamma is near zero since this trade is out of the money.
    - As the trade approaches the upper strike gamma will continue to decrease to increase the chances of the trade ending ITM

Time Risk

- **Theta Analysis**
  - This trade has a theta of positive 0.000314 due to the underlying being near the breakeven price which causes time decay to have little effect on the trade
    - However, as the trade approaches maturity theta will increase as the amount of time the trade has to end ITM decreases

Implied Volatility Risk

- **Vega Analysis**
  - This trade has a slightly negative Vega of (0.00076) since the trade is Vega neutral
    - The Vega of the short call and long call cancel each other out so the price does not necessarily change as volatility changes
    - However, this trade could benefit from volatility that causes the underlying price to increase

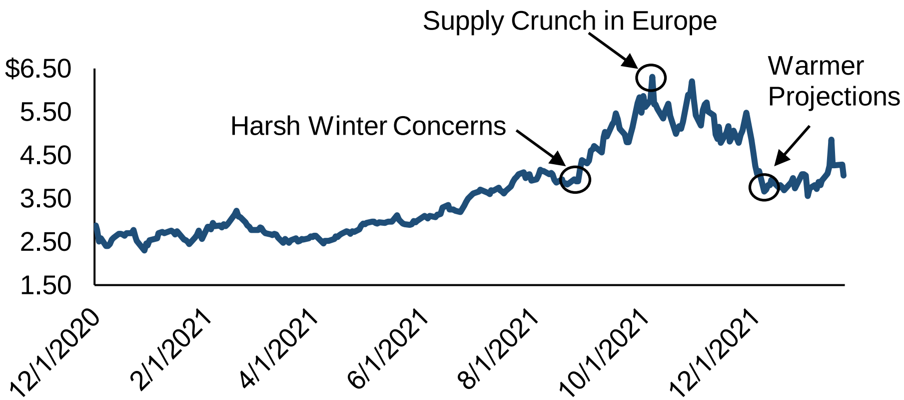
Interest Rate Risk

- **Rho Analysis**
  - Rho is slightly negative at (0.00177) due to the short call depreciating more than the long call is appreciating since interest rates are rising
    - Rho does pose a risk to our trade as the Fed is planning to hike rates within the expiry of this trade

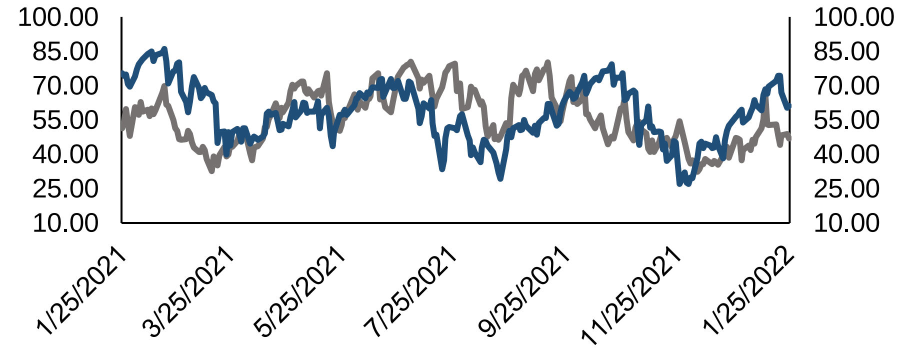
I. Technical Bias & Fair Value

Technical Bias & Fair Value

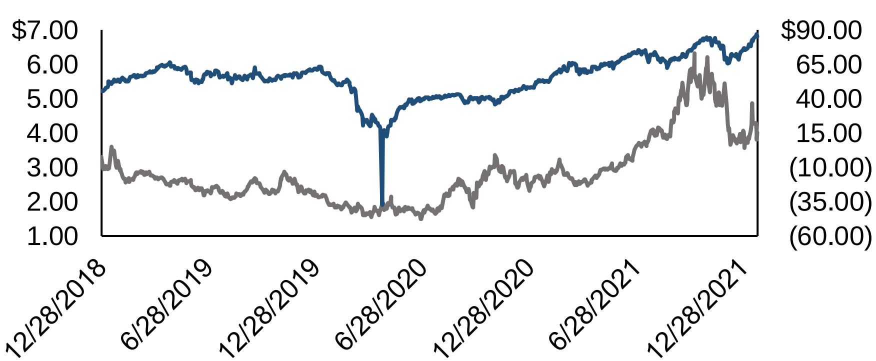
One-Year Price Chart | Major Events



One-Year RSI Chart



Three-Year Natural Gas vs Crude Oil Graph



Synopsis

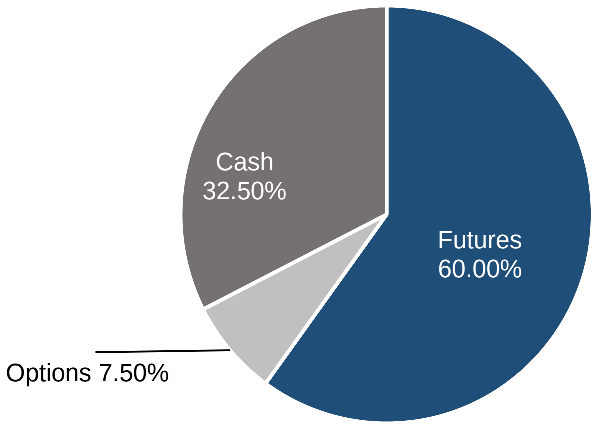
- In October 2021, natural gas spot prices increased to $6.31 due to emerging supply shortages and colder winter forecasts
  - By December, a warmer winter outlook alleviated pressure and caused prices to decrease from their seven-year highs
- The one-year RSI chart shows that natural gas is approaching oversold territory, while crude oil is approaching overbought territory
  - Due to the shrinking RSI, natural gas should pick up momentum and begin to rally throughout 2022
- The natural gas vs crude oil graph illustrates the similarity of natural gas and crude oil price movements over the last three years

I. Capital Allocation

Capital Allocation

Allocation Breakdown & Portfolio Implications

- The Sector plans to allocate 60.00% of the portfolio towards futures, 30.00% towards options and 10.00% towards cash
- This pitch will utilize roughly one-fourth of our allocation towards options
    - This results in the sector having equal allocation for the remaining three energy pitches
- The sector believes that Natural Gas is considerably bullish due to the current supply and demand conditions prompting the Sector to increase exposure to Natural Gas



Portfolio vs. Benchmark Allocation Weights