Case Analysis for Henan Yuguang Gold & Lead Co Ltd. of Hedging by Option

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Abstract. Options can be used to hedge certain risks and achieve the purpose of hedging. Due to the short time to market of zinc options, there is few relevant research at present. This paper selects the hedging case of Henan Yuguang Gold & Lead Co Ltd.'s use of zinc options to construct a bull market call option spread strategy in May 2021 and uses the case analysis method to analyze the hedging effect of Henan Yuguang Gold & Lead Co Ltd.'s use of bull market call option spread strategy. Analysis of unavoidable risks, combined with other uses of the company's cash flow to conduct research. This paper also puts forward the conclusion that enterprises need to understand hedging correctly. It has made a certain contribution to the direction of the enterprise's hedge plan.

Keywords: Option; Hedging.

1. Introduction

In recent years, the trading volume and turnover of futures and options in my country have increased rapidly, and more and more companies have participated in the futures market. Under the background of the epidemic, companies use futures and options as risk management tools. According to the relevant data released by Shanghai Futures Exchange, in February 2020, the delivery volume of 16 varieties of Shanghai Futures Exchange reached 92,000 lots, and the delivery volume was higher than last year. In the same period, it has increased by more than 80%, and the delivery amount has reached more than 10 billion yuan. In the context of the normalization of the epidemic and the turbulent global situation, the business risks of enterprises have increased. The correct use of futures and options tools can help enterprises reduce business risks and maintain business continuity. In August 2020, zinc futures options with zinc futures as the underlying asset were listed. The listing of zinc options provides more hedging tools for companies in the related industry chain. The trading volume and value of zinc options have generally been on an upward trend since August 2020.

The newly listed zinc options can be used as a risk management tool for enterprises in their daily business activities. If enterprises can use zinc options flexibly and effectively, they can meet the requirements of diversification and individualization of enterprise risk management. Therefore, it is necessary to study and analyze how non-ferrous metal companies use zinc options flexibly.

Henan Yuguang Gold & Lead Co Ltd. is a leading enterprise in China's non-ferrous metal industry. The business scope of Henan Yuguang Gold & Lead Co Ltd. is lead-zinc, copper, aluminum and other non-ferrous metals. Henan Yuguang Gold & Lead Co Ltd. adheres to a green development approach, actively participates in non-ferrous metal market transactions, participates in futures and spot markets in daily business activities, and actively manages risks by using hedging, and has achieved good trading and operating performance. Continue to strive for the goal of building a world-class enterprise. During the 2008 financial crisis and the impact of the global epidemic, Henan Yuguang Gold & Lead Co Ltd. actively used zinc futures for hedging, which effectively controlled the market price risk and ensured the continuity of operations.

2. Basic Concept

2.1 Option

An option is a kind of right to buy or sell a specific underlying asset at a certain price on or before a certain day in the future. The essence of options trading is that at some point in the future, the buyer has the right to buy or sell a specific asset.

2.2 Hedging

In order to achieve the purpose of stable operation, futures arbitrage for the purpose of transferring risks in the spot market to speculators is called hedging. Hedging assumes that futures and spot prices will move in the same direction because futures and spot prices are affected by the same factors. At the same time, when the futures contract approaches the expiration date, the futures and spot prices tend to be the same, which has a convergence effect. Therefore, the use of futures or options instruments in the futures market and an opposite operation in the spot market can reduce the risk of price changes that may be encountered when buying commodities now to prepare for future sales or to prepare for future purchases. Depending on the purpose of hedging, hedging is divided into selling hedging and buying hedging. The purpose of buying hedging is to lock in the buying price, which is usually a spot short because he is worried that the price will rise in the future, so Bought futures in the futures market. A sell hedge is used to lock in a sell price, usually in the futures market out of fear that the price will fall in the future. For hedging to be effective, certain rules need to be followed. The purpose of hedging spot price risk can merely be achieved by buying or selling similar quantities of the same commodity in the futures market and the spot market.

3. Case Analysis

3.1 Background Information

On May 17,2021, Henan Yuguang Gold & Lead Co Ltd.'s subordinate processing plant signed a 3,000-ton zinc purchase contract, and two months later, the company will pay and receive the goods at the agreed price at that time. The current spot price of zinc is 22,070 RMB yuan per ton, and the futures price is 22,150 RMB yuan per ton. It is expected that the future zinc price will fluctuate greatly, because we are worried that the price of zinc will rise further, avoid the risk of rising zinc prices, and reduce the cost of option hedging. Henan Yuguang Gold & Lead Co Ltd. bought 600 call options with an exercise price of 22,400 RMB yuan per ton and sold 600 call options with an exercise price of 22,600 RMB yuan per ton to construct a bull market spread option portfolio. Two months later, the price of zinc rose to 22240, and the price of zinc futures. It rose to 22465. The call options bought by Henan Yuguang Gold & Lead Co Ltd. in the futures market helped Henan Yuguang Gold & Lead Co Ltd. make up part of the losses in the spot market, while the selling call options helped Z The company received a certain royalty income.

If a company wants to use option hedging to avoid risks, it must first be based on the analysis of the company's risk exposure and a correct understanding of future price trends, and then select appropriate options on this basis, and open positions based on risk exposure. Time, closing time, opening volume, and at the same time, you can choose a combined hedging strategy based on the prediction of future price trends, and make timely adjustments according to future market changes. Since the full name of the zinc options listed on the Shanghai Futures Exchange in my country is zinc futures options, and the underlying asset is zinc futures, the analysis of the hedging effect is based on the price changes in the futures market and spot market. Henan Yuguang Gold & Lead Co Ltd. signed a purchase contract on May 17, 2021, with delivery two months later. The Shanghai zinc futures option is an American-style option with the Shanghai zinc futures contract as the underlying asset, and its expiration date is the fifth-to-last trading day of the month before the expiration month of the zinc futures contract. After the Shanghai zinc option expires, if the contract is executed, the corresponding number of zinc futures contracts will be obtained. Therefore, the option opening time is May 17, the contract signing date, and the closing time is July 17. In terms of opening positions, the purchase volume of 3,000 tons of zinc corresponds to 600 lots of zinc futures. Based on the forecast of a slight increase in zinc prices in the future, the bull market call spread strategy is adopted. The bull market call spread strategy consists of buying an at-the-money or out-of-the-money call option and selling a call option with a higher strike price. This strategy can help reduce premium costs and limit gains and losses.

3.2 Hedging Strategy

Based on this strategy, Henan Yuguang Gold & Lead Co Ltd. bought 600 lots of ZN202108C22400 and sold 600 lots of ZN202108C22600 to construct a bull market spread option combination. The characteristic of the bull market spread option strategy is that at expiration, if the market price rises higher than the strike price of the short call option, the investor can obtain the highest profit. The maximum return is the maximum income minus the net premium payout, and the maximum income is equal to the difference between the strike price of a short call option and a long call option. Without considering transaction costs, the biggest risk is the net premium payout. The break-even point at option expiration is equal to the strike price of the long call plus the net premium paid. The income from the bull call spread will not exceed the difference between the strike price of the short call and the long call, the maximum profit will not exceed the maximum income minus the net premium expense, and the maximum risk will not exceed the net equity expense. When an option expires, its break-even value is equal to the strike price of the option and the net payout of equity (disregarding transaction costs).

Table 1. Profit from the Transaction

Price of Spot: 22240	Price of Option:22500
Profit from Option	22500-22400=100 yuan/ton 100*3000=300000yuan
Profit from Spot	22070-22240=-170 yuan/ton -170*3000=-510000 yuan
Premiums	903-989= -86 yuan/ton -86*3000=-258000 yuan
Handling Fees	1.5* 1200=1800yuan
Total profit/loss	100-170-86=-156 yuan/ton -156*3000-0.18=-469800 yuan

Henan Yuguang Gold & Lead Co Ltd.'s current option hedging spot price trend is in line with the expected upward trend, but it exceeds the expected upward range, and it has achieved success to a certain extent, reducing the loss in the spot market. In the end, Henan Yuguang Gold & Lead Co Ltd. gained 40,200 yuan in the futures market, reducing the loss in the spot market to 469,800 yuan. The bull call option spread strategy adopted by Henan Yuguang Gold & Lead Co Ltd. allows Henan Yuguang Gold & Lead Co Ltd. to reduce the premium cost, which reduces the break-even point compared to a single call option. In addition, the strategy locks in risk, the biggest being the net premium payout. However, this trading strategy also has certain drawbacks. This trading strategy locks in risks while also locking in benefits. Henan Yuguang Gold & Lead Co Ltd.'s maximum gain in the options market does not exceed the exercise price of the call option, and it cannot obtain zinc futures prices in the futures market. Further. Rising earnings. Henan Yuguang Gold & Lead Co Ltd. successfully used zinc options to gain profits in the futures market, making up for losses in the spot market to a certain extent. The main reason is that it correctly analyzed future futures price trends and chose an appropriate hedging strategy at the corresponding hedging time. Henan Yuguang Gold & Lead Co Ltd. chose the bull market call option spread strategy based on the expectation that the future price of zinc futures will rise, and the increase will be within a certain range, and considering that buying call options at this time will pay a higher premium.

Judging from the effect of Henan Yuguang Gold & Lead Co Ltd.'s hedging case, although Henan Yuguang Gold & Lead Co Ltd.'s hedging still has a certain loss in the end, Henan Yuguang Gold & Lead Co Ltd.'s hedging successfully made up for the loss in the spot market in the futures market, and Henan Yuguang Gold & Lead Co Ltd.'s hedging in the futures market made up for the losses in the spot market. The hedging operation process is standardized, so the hedging case of Henan Yuguang Gold & Lead Co Ltd. is relatively successful and has certain reference value.

At the same time, it also suggests that we are looking at corporate hedging in a correct way and distinguishing between corporate hedging and speculation. The purpose of corporate hedging is to maintain business continuity and reduce operational risks rather than pursuing high-risk, huge non-operating returns.

What's more, from the perspective of Henan Yuguang Gold & Lead Co Ltd.'s future improvement suggestions for hedging, Henan Yuguang Gold & Lead Co Ltd. has certain advantages in the internal system of the hedging system, but the zinc options have been listed for a short time, and the company's flexible use of options needs to be improved. Henan Yuguang Gold & Lead Co Ltd. should make full use of futures and options companies in the future to develop diversified and dynamic hedging strategies.

3.3 Risk

Futures and options as hedging tools can help companies avoid risks. But at the same time, futures, and options, as a kind of financial derivatives, have certain risks, such as market volatility risk, margin risk, market liquidity risk, artificial operation risk, counterparty risk, etc. Therefore, enterprises should also pay attention to the risks brought by financial derivatives in the process of hedging with futures and options instruments. After hedging perfectly, there is still some risk such as policy risk.

For China's financial market, futures and options are still new, and for such financial derivatives with natural leverage, the supervision will be stricter. Since the stock market adjustment on June 15, the CFFEX has also adjusted the trading rules of futures several times, which also affects the daily operations of many trading parties for hedging. In the most severe cases, all types of futures accounts cannot open empty orders. In this case, the hedging party can only close the spot position and operate in the state of low position or even short position. This kind of policy risk is a systemic risk that is difficult to hedge against through trading.

Since the cash flow is certain, when the company adopts a hedging policy to avoid a certain degree of unsystematic risk, a part of the cash flow will be taken up, which will lead to a reduction or even a shortage of cash flow that can be used to pay other channels such as executive compensation.

In addition, due to the risky investment, the future cash flow is uncertain. External financing now is equivalent to changing the state of high cash flow in the future to the present. By depositing the raised funds, the business can get investment funds in all states. In other words, taking on risky debt to save raised funds is equivalent to shifting resources from a future high cash flow state to a low cash flow state. Conversely, preserving debt capacity (reducing debt) is equivalent to shifting resources from a future low cash flow state to a high cash flow state. When a company expects that investment opportunities will likely appear in the company's future with low cash flow when the company has a high "hedging need", it is likely to save cash for future use. In other words, if the correlation between cash flow and investment opportunities is low, and the company has high hedging needs, it prefers to save money, especially when corporate financing is severely limited, which will help companies seize future investment and investment opportunities. competitive opportunity. Companies with low hedging needs often have investment opportunities and have abundant cash flow, so they do not need to reserve a large amount of cash, because this will reduce asset allocation returns.

4. Conclusion

To successfully carry out futures hedging business, a correct understanding of hedging is the first step. Outstanding companies in the industry such as Henan Yuguang Gold & Lead Co Ltd. strictly adhere to hedging as a means of hedging rather than speculation in the development of hedging business. They have been planning and executing hedging business based on the company's production and operation plan, inventory, purchase, and sales. Speculative transactions in the futures market are highly risky and uncertain. Enterprises must not rely on speculative transactions in the futures market for continuous and stable experience. Business development deviates from the original intention, from risk management to speculation. When participating in the futures market, enterprises must have a correct understanding of the nature of hedging, establish a corporate management system that matches hedging, and beware of risk management turning into speculation.

From the national point of view, zinc options can be used as an efficient means to stabilize prices, and further strive for the right to speak in international non-ferrous metal pricing. Enterprises can use option hedging to solve some of the problems encountered in futures hedging. Option strategies are more flexible and diverse, which can help enterprises better formulate a hedging plan suitable for the company according to business objectives and market price changes.

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