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An Analysis of the Emphasis on the Application of Portfolio Insurance Strategies in Risk Management

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ABSTRACT. *With the rapid development of social economy, people's assets are getting stronger and stronger, and the allocation of assets is also paying more and more attention. Portfolio insurance is a method of optimizing asset allocation and realizing asset preservation. When there are large fluctuations in the stock market. It can adjust the ratio between the risky assets held by customers and the risk-free assets on the basis of the established operating rules, so as to avoid asset risks. The advantage of portfolio insurance is that it can not only prevent the risk of falling asset portfolios, but also help it turn from danger to safety and achieve profitability. This article takes the classification and characteristics of the portfolio insurance strategy as an entry point, and analyzes its application in the domestic capital preservation fund in detail, and strives to add benefits to the smooth development of enterprise risk management.*

KEYWORDS: *Portfolio insurance strategy, Risk management, Application focus, Asset allocation*

1. Introduction

Portfolio insurance can be divided into non-systematic risk and systemic risk in risk management. The former is suitable for portfolio management theory and can reduce investment risk by diversifying investment. Systemic risk cannot be reduced through portfolio management, but it needs to rely on portfolio insurance strategy to avoid. A portfolio insurance strategy is an investment capital preservation strategy that protects companies from gains while limiting price drops. Reasonable use of this strategy can ensure that the value of the portfolio remains stable or increases. Although the portfolio insurance strategy can reduce system risks and enable enterprises to gain value-added benefits from the stock market, it also gives up part of the upward capture rate and cannot maximize profits.

2. Features and Classification

2.1 Features

Portfolio insurance has five major characteristics: First, chasing up and down. Portfolio investment insurance strategies are in the category of convex strategies (buy when the stock rises and sell when it falls), and the ultimate goal is to protect the asset value. In the absence of appropriate risk prevention methods, investors cannot blindly make up positions at low points, otherwise, it may cause a huge loss of portfolio insurance strategy. In this state, according to the characteristics of portfolio insurance, it should chase up and down. The second is strong strategy. Compared with other investment insurance strategies, the portfolio insurance strategies pursue investment preservation rather than maximization of investment benefits, and have significant unconditionality. Under this requirement, specific implementation actions must be based on investment restrictions. Other investment strategies often deliberately ignore this point. To take a simple example, when using a replica put option strategy, the execution price is changed according to the change of the underlying asset. To achieve the desired replication effect, it is necessary to constantly adjust the proportion of the combined institutions. If there is an adjustment delay, it will affect asset preservation. The third is high technical content. The technical content of the combined insurance strategy is significantly higher than other strategies. Mainly because it is based on options, investors need to use a calculation model to calculate the value of options, which requires extremely high technical content to determine the volatility of asset prices. The fourth is to increase opportunity cost and transaction cost. Because often need to adjust the combination structure, it will increase costs invisibly. Five is strong liquidity. The portfolio investment insurance strategy requires that the selected investment products have strong liquidity, because the dynamic portfolio insurance strategy needs to constantly adjust various types of assets, and poor liquidity will increase transaction and shock costs.

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2.2 Classification

From an operational point of view, portfolio insurance strategies can be divided into two categories: one is a portfolio insurance strategy formed based on the options derived from the option pricing formula, and common copy-sell strategies, etc. Second, starting from its own risk defense capabilities and preferences, portfolio insurance strategies formed by setting parameters, commonly used stop loss strategies and CPPI strategies.

3. Comparison of Portfolio Insurance Strategies

In order to show the comparative effect, a stock investment portfolio with a net value of 200 million yuan was chosen as an explanation case. When the stock portfolio is guaranteed (completely diversified risk), the stock price index and the portfolio return are the same. Based on the Shanghai index, the Shanghai Composite Index in March 2020 was about 2500 points, and the value of the stock index futures contract points was ¥150. To calculate the value of each index futures contract, the formula is 2500 × 160 = 400,000 CNY. We can set the risk-free interest rate to 8%. The choice of trading strategy is mainly to ensure that the lower limit of the net value of the investment strategy after one quarter (June) is not less than 90 million yuan. Compare through three trading strategies:

3.1 Futures Insurance Trading Strategy

If the investment portfolio holds spot, in order to lock the lower limit of the portfolio's net worth, the insurance trading strategy should short the corresponding index futures and must stop losses in time. When the stock index fell to 10% (2250 points), the net value of the portfolio was in line with the expected lower limit of 90 million yuan. Affected by the purchase cost, the price of stock index futures was higher than 2250 points during this period. If the stock index keeps tumbling down and the index futures price reaches 2250 points, the short-selling index futures contract of 250 in June can guarantee a net portfolio value of 90 million CNY. If the stock index pulls back to the corresponding stock index futures value of 2250 points, you can choose to close the futures position at this time. In this way, not only can the lower limit of the portfolio value be locked, but also the corresponding stock index rising income can be harvested. In the insurance trading strategy chart, the case’s stop loss point is at 2250. The horizontal line here is the stop line once the stock price touches this line, the index futures trading should be started.

3.2 The Insurance Trading Strategy of Option

Through the study of a large number of transaction facts, we found that when trading the subject matter and the option right at the same time, under special circumstances, the option right can provide protection for the subject matter, and the subject matter can in turn protect the option right, the professional field refers to this phenomenon as hedging positions. As a simple example, if you buy a stock and its selling rights at the same time, and sell its buying rights at the same time. When the stock price declines, the loss of the stock due to the price drop can be compensated by the proceeds of the right to sell. This act of selling the right to protect the price is called a protective right to sell. When the stock price rises, the income generated by the stock can be used to subsidize the loss of the call right. The act of protecting the call right by the stock is called to make up for the sale of the call right.

According to the past practice, the investment portfolio of the spot position believes that the index selling option that the investor purchases is equivalent to the spot position can fully exert the effect of portfolio insurance. Also taking the case in Subheading 1 as an example, to achieve the desired hedging effect, as long as the index is 3600 points, buy 250 index sell options. At this time, a small amount of option rights can achieve the expected effect of net value exceeding 90 million CNY after the first quarter. There is no need to make any changes to the insurance trading strategy that uses options during the insurance period. You only need to wait for the expiration date to achieve the purpose of portfolio insurance. The main advantage of this strategy is that it is simple and convenient to operate in a specific market environment, the transaction cost is lower than the spot stock transaction cost, and the trading strategy is not affected by changes in the stock index.

4. The Application Focus of the Combination Insurance Strategy in Capital Preservation Fund in China

Southern Hedge Value-Added Fund is China’s earliest capital preservation fund. It intentionally circumvented the concept of capital preservation when it raised foreign funds. It only carried out capital

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preservation in the specification and briefly explained the CPPI mechanism. The capital preservation fund in the true sense is the Yinhua Capital Preservation Value-added Fund, which raised a total of 6 billion CNY. At present, CPPI strategies are used for investment in domestic guaranteed capital investments. With the development of the times, the Fund's interpretation of the CPPI strategy has been continuously improved. Based on the optimized CPPI mechanism, the Southern Capital Preservation and Value-added Fund dynamically adjusts the lower limit of risk assets to reasonably avoid investment risks. The current CPPI mechanism is based on the premise of ensuring the safety of funds, flexibly using investment methods, and striving to achieve value-added on the basis of asset preservation. The CPPI strategy used in the past was too simple, and the initiative was poor. Once the benefits were too large, it was easy to ignore the excessive investment caused by transaction costs and market fluctuations. The optimized CPPI strategy successfully avoided these problems.

The aforementioned Yinhua Capital Preservation Fund elaborated on the CPPI strategy and its optimized mechanism. The common feature of the two is to keep the time unchanged. To put it simply, when using CPPI strategy to adjust securities assets, it is necessary to refer to the long-term trend of the market to adjust the medium- and long-term security magnification. When the market is in a downturn for a long time, the use of time-invariant portfolio insurance strategies can effectively reduce investment risks and achieve capital preservation. Another well-known fund in China, Cathay Capital Preservation Fund, uses an option-based investment insurance strategy (abbreviated as OBPI). This concept applies to convertible bond investments. It divides convertible bond investment into two parts: call options and corporate claims. If the conversion price is lower than the stock price, the relationship between the two is close, otherwise the price characteristics of convertible bonds are consistent with bonds.

5. Conclusion

As stated above, compared with foreign asset markets, China's development is relatively slow. When the domestic capital preservation fund chooses to apply a combination insurance strategy, it mainly imitates the use of foreign countries, and the consideration of the domestic market is not sufficient, ignoring the current situation of the domestic financial market is not perfect and the product variety is scarce. In the current form, how to formulate a more optimized insurance portfolio strategy is the main direction of future research.

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