



Financial Derivatives Portfolio Analysis Based on Risk Management

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Abstract. Financial derivatives are important financial instruments in the new era, so they are widely used in the investment portfolio, not only to reasonably manage risks, but also conducive to financial investment to achieve the goal of income optimization. However, under the influence of current market fluctuations, financial derivatives themselves are complicated, which leads to the use of financial derivatives. Therefore, it is very important to strengthen the management of the risks existing in financial derivatives portfolio. Based on this, this paper gives an overview of financial derivatives, analyzes common portfolio risks, and then discusses the risk management path for financial derivatives portfolio, so as to provide reference for investment personnel to deal with risks.

Keywords: risk management; financial derivatives; investment portfolio

1 Financial Derivatives Related Overview

Risk management is the core index during financial derivatives portfolio management, including not only the identification and evaluation of risks, but also the formulation of control and preventive measures for various risks^[1]. Due to the particularity of financial derivatives, there are high risks during the investment period, so it is very critical to carry out risk management. The financial derivatives portfolio needs to consider a variety of factors, including credit, market, liquidity and other risks. Only by effectively avoiding market risks, reducing the credit risks of both sides, and rationally allocating funds to reduce the occurrence of liquidity risks, can it have an advantage in the field of financial derivatives investment.

Financial derivatives are important and common financial instruments in the financial industry. They mainly realize their application value with various basic assets, such as bonds, stocks, currencies and other forms^[2]. There are also relatively many types of financial derivatives, including futures, options, swaps and other modes. The value of different instruments is mainly reflected by the changes of the underlying assets. Futures is mainly a standardized contract form in the financial industry, and assets can be bought or sold at an agreed value at a fixed time in the future. Options is a common contract situation in the financial industry, which gives the right to purchase and sell at a specific price to the holder at a specific time, but the ownership of obvious rights is

not an obligation; swap refers to the agreement of currency exchange with the agreed exchange rate at a specific time. The application of financial derivatives is conducive to investors to strengthen the implementation of risk management, carry out timely hedging operations with the help of financial derivatives, and effectively reduce various risks caused by the excessive floating of the underlying asset prices. Financial derivatives can also be used in speculative operations to increase their profit margins through price changes^[3]. However, there are various risks during the application of financial derivatives, which requires investors to be vigilant when using financial derivatives, timely assess the possible risks according to their own situation, and also clarify their own risk tolerance, so as to formulate effective risk management measures.

2 Common Risk Analysis

2.1 Market Risk

Market risk refers to the situation of capital loss caused by the large fluctuation of the market price. The occurrence of risk is mostly directly related to the factors such as interest rate, stock rate and exchange rate. During the period of market risk analysis, investors need to have a correlation between obviously different asset types. If the correlation is high to lead to a large trend of change in asset prices, but also lead to the price of other assets to be affected, so as to increase the risk of the portfolio. The occurrence of market risks is related to macroeconomic factors, such as political events, global economic changes, disasters with different resistance, etc., which are easy to affect the market price, thus increasing the risk probability of the investment portfolio^[4].

2.2 Credit Risk

Credit risk refers to the fact that the contract party cannot cash the original contract content of the investor, so that the contract other party not only fails to achieve the expected effect of the original contract, but also tends to lose the principal of the investor. Therefore, the financial derivatives portfolio should fully consider the occurrence of credit risk^[5]. The credit risk is mainly caused by the investment personnel using the third-party institutions to evaluate the credit status of the debtor, but the rating agencies themselves have poor qualifications and are prone to various errors in the estimation process. Credit risk also includes the type of concentration risk, which mainly refers to the sufficient dependence of the portfolio on an asset and the other party. During the transaction, it is lead to serious risks in the portfolio^[6].

2.3 Liquidity Risk

Liquidity risk of financial derivatives portfolio is a common type, which mainly refers to that financial derivatives cannot be quickly traded in the market, thus affecting the loss of their own funds. The factors leading to liquidity risk are large, including ex-

cessive changes in market activity, changes in market development trend, and behavior changes of market participants^[7]. Liquidity risk also includes price volatility, cost, position and other types of risk. The risk of price fluctuation refers to the substantial change of asset prices due to the serious lack of liquidity in the market. At this time, the price used by investors is usually unreasonable, which also leads to their own economic losses. Cost risk is mainly that investors use higher cost to realize investment, including transaction costs, bid and sell difference, etc., so as to affect the income of investment personnel. Most of the position risk is because the investors can not quickly realize the original assets, which affects the flexibility of the portfolio, thus prone to risk problems.

3 Risk Management Paths for a Financial Derivatives Portfolio

3.1 Establish Investment Objectives and Risk Preferences

The risk management of financial derivatives portfolio is not only for the investors to choose the appropriate investment tool, but also to determine the investment target, and also to give a detailed analysis of the risk preference. Investment personnel should first confirm their investment goals, according to their own situation clear can choose steady growth investment direction? Or to pursue the form of high risk and high returns? After clarifying their own investment objectives, we should make a comprehensive evaluation of their risk tolerance. At the same time, we should evaluate our own risk preference, understand whether they have enough ability to bear large investment risks, and formulate corresponding investment plans according to their actual situation^[8]. Subsequent investment personnel should make a comprehensive analysis of the changing trend of the market environment, so as to understand the current social economic trend, and clarify the impact of the current government policies on various financial investments. During the period of risk management, investment personnel should actively collect all kinds of data and information, so as to better analyze the potential risks of various information, so as to fully grasp the development trend of the market and prevent the occurrence of risks during the investment period. Investment personnel should fully consider different asset types, so as to clarify the allocation of their own assets, which is conducive to diversify the investment during the market investment period, and can also avoid the occurrence of various overall risks. Investment personnel need to adjust the investment portfolio regularly, and then examine the investment risks combined with the market fluctuations, so as to develop more effective risk management strategies^[9].

3.2 Choose the Appropriate Financial Derivatives

Different types of financial derivatives will also be different in their risks and characteristics. Investors can comprehensively analyze their risk ability to bear according to their own actual situation, and then reasonably select financial derivatives in combination with market expectations and various factors. This requires investors to have a deeper understanding of market trends and clarify the actual use of financial derivatives^[10]. For example, to maintain value and reasonable speculation; to avoid hedging

the risk of excessive price fluctuations; to avoid hedging interest rate risk, investors can choose swap contracts. Investors should fully understand their own investment goals, and then combine with their own risk preference, so as to choose the most appropriate financial derivatives. During the selection period, investors should analyze the liquidity of financial derivatives. For financial derivatives with a small market, their liquidity will be relatively low, which will easily lead to a large difference in price fluctuations during the trading period, thus aggravating the investment risk. There are also some financial derivatives, their own transaction costs are relatively high, easy to appear a variety of transactions, procedures, positions and other expenses, which requires investors to consider various factors. There are also differences in risk management strategies formulated by different types of financial derivatives. After choosing more appropriate investment projects, investors should formulate reasonable risk management measures according to market expectations^[11]. For example, different types of financial derivatives are reasonably combined to diversify the risks, or corresponding stop points or stop points can be formulated to control the occurrence of risks, so as to achieve long-term and stable investment returns.

3.3 Decentralized Investment

Decentralized investment in financial derivatives portfolio is a common strategy, mainly investing in different industries, different asset types and different regions, which can reduce the overall risk exposure, and then achieve steady investment interest rate return. Investment personnel can choose according to their own actual situation of different types of financial derivatives, to their reasonable allocation of funds, effective control of specific market volatility, also can reduce the influence of the overall investment risk, once the individual investment corresponding fluctuations and changes, other assets can still work normally, to offset the risk loss^[12]. Investors can also choose to invest in different regions and in different industries to prevent investment in fixed regions and industries from having a serious impact on portfolio investment. For example, during the investment period of the equity period, the investors can invest in many fields according to the situation, such as medical industry, science and technology, financial industry, etc., so as to prevent the occurrence of the overall risk. Decentralization also helps investors to choose financial derivatives at different risk levels, or to get returns by investing in projects at different time periods. The selection of financial derivatives at different risk levels requires investors to increase evaluation, so as to clarify which products are low risk and low return, or determine which products are high risk and high return. They can effectively combine the two products according to their own situation, so as to balance the investment risks. Investors can also make reasonable choices of financial derivatives at different times to avoid the overall risk of fixed time investment and use different time periods to avoid risks.

3.4 Develop Stop Loss and Stop Profit Nodes

The establishment of stop profit and stop loss points in the financial derivatives portfolio is conducive to clarifying the risk control situation of investors during the trading

period, and also to determine their profits. Stop loss usually refers to the different degrees of loss during the investment, stop loss to prevent the degree of loss; stop profit is the investment personnel profit to the specified degree, open liquidation profit to avoid profit recovery^[13]. When making the stop loss and stop profit point, it is necessary to consider a variety of factors comprehensively, and the market volatility nature of different types of financial derivatives should be clarified, so as to clarify the stop loss and stop profit point. If the market volatility of financial derivatives is large, relatively loose stop and stop loss points can be designed, and smaller stop and stop loss points can also be designed for financial derivatives with less market volatility. The setting of nodes also needs to fully consider the investment objectives and risk preference of investment personnel, clarify the risk tolerance of investment personnel, so as to grasp their expected profit requirements, and then set reasonable stop loss and stop profit nodes combined with personal conditions. Investors can also actively introduce a variety of data analysis, so as to comprehensively discuss the basis of financial derivatives, so as to determine a reasonable stop loss and stop profit point^[14]. With the help of technical analysis is also conducive to investment to the development trend of the market and support resistance rapid identification, and clear reasonable stop and check surplus point definition, also helps to fully grasp the reasonable investment opportunities, and control the risk of financial derivatives portfolio, to obtain greater investment returns.

3.5 Regular Monitoring of Risks and Reasonable Adjustment

The risk management of financial derivatives portfolio is not only to formulate comprehensive and effective risk management measures, but also to conduct real-time monitoring of various risks and reasonable adjustment of management plans. Regular monitoring of risks is the main path to ensure the safe income generation of the investment portfolio. Comprehensive analysis of different types of risk factors, and then evaluate the probability of risk occurrence, and effectively formulate various risk response plans^[15]. For risk monitoring to investment personnel real-time market trends, especially for the volatility of financial market prices, but also to financial related news and market and other economic data heavy attention, combined with the corresponding data analysis, to find the potential risk factors, adjust the risk control measures. Once the corresponding risk problems are found, various effective management measures should be carried out in time. Investors can quickly reduce the positions of high-risk assets, or use reasonable insurance tools or hedging methods, which is conducive to investors to effectively address various uncertainties in market fluctuations, and also ensure the long-term returns of financial derivatives portfolio.

4 Conclusion

To sum up, the risk management of financial derivatives portfolio is a very important link. Through comprehensive analysis of various portfolios, it is conducive to timely understand the impact of market fluctuations on the investment project, and then de-

velop a more effective and comprehensive risk management strategy. Risk management during the practical application, investment personnel need to test portfolio, to assess the risk of possible problems, not only to adjust the portfolio, at the same time to develop a variety of efficient risk management measures, cope with the market trend, and in the financial market for long-term and stable return on investment.

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