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Research and Strategy Analysis of Asset Return Optimization in Internet-based Financial Engineering

Shu Wu
University of Shanghai for Science and Technology
Shanghai-Hamburg College
Shanghai, China,200093

Abstract: The article introduces the application advantages of financial engineering in Internet financial risk management and control in detail, finds out the main risks in Internet financial innovation through investigation and research, and puts forward effective measures to optimize risk control, such as building a risk management and control system, enhancing the decision-making power of Internet finance, scientific application of derivatives, improving the supervision and management system and strengthening credit evaluation using the saddle method and stochastic integral theory, the optimal wealth level and the corresponding optimal asset portfolio strategy of the portfolio insurer are solved , And compare the differences and similarities between the optimal investment strategy of the optimal portfolio insurance model and the optimal investment consumption model.

Keywords: Engineering Application Talents; School-enterprise Cooperation

1. INTRODUCTION

The rapid development of Internet finance has brought a subversive impact on people's lives and work. Due to the innovative, high-yield, high-risk and other characteristics of the actual operation of Internet finance, it is necessary to effectively control the risks generated by it. Through the application of financial engineering, solve the problems of internet financial innovation and risk, and carry out efficient supervision on relevant platforms, and continuously improve the quality of service. With the continuous development of commercial banking, securities investment and corporate finance, financial engineering has emerged as a new discipline.

At present, there is no unified definition of financial engineering. It is generally believed that the definition proposed by the American scholar Fenidi is representative. Therefore, with the increase of excess return r, the risk preference factor α It increases at an increasing rate, and its law is shown in Figure 1; Conservative investors pay more attention to returns. With the increase of excess return r, risk preference factor α When the excess return increases to a very high level, the risk preference factor increases at an increasing rate and is infinitely close to h0

Middle-type investors are relatively stable, pay equal attention to income and risk, and their risk preference factors α The relationship with excess return r is shown in Figure 2. It can be clearly found that the optimal portfolio insurance model is compared with the general dynamic investment and consumption optimization problem , The former's optimal strategy set includes three parts of investment in risk-free assets, risk assets and options. The latter's optimal strategy set includes only two parts of investment in risk-free assets and risk assets. The innovation and development of Internet finance mostly stems from the progress of Internet information technology. If such information technology has risks, it will also penetrate the Internet finance industry to varying degrees.

1.1.1 Investment preference curve is shown below. (this is a sample from the Internet)

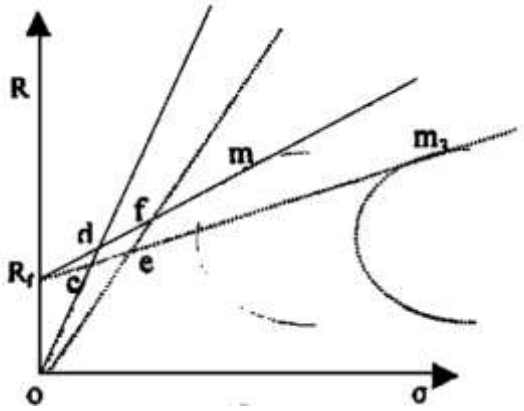

Figure. 1 Investment preference curve

2. THE PROPOSED METHODOLOGY

2.1 Study on Optimization of Portfolio Insurance Model

For example, when the security of network information technology is not well guaranteed, the lawless elements may attack the network security vulnerability and bring serious economic losses to the Internet financial-related enterprises. Third, it can be more flexible. In the process of intra-field trading, it can sell and supplement according to the needs of both parties in a timely manner, and in the process of over-the-counter trading, it is basically set according to the needs of traders. The existence of financial engineering enables investment banks and other institutions to set up and develop different financial products at any time according to the needs of the trading market.

Generally speaking, rational investors in the financial market are risk averse. This section discusses different types of risk averse investors separately, mainly including constant relative risk averse, incremental risk averse, etc. Since this preference characteristic of investors can be expressed by different utility functions, we have different utility functions such as

logarithmic utility function, negative exponential utility function The analysis is based on the portfolio insurance model with the same elastic utility function. The overall price level of securities and its changes depend on the state and changes of the whole economic, political and social factors. When all securities investors in the market unanimously expect a good year in the market, the momentum of the rise of securities prices is relatively strong, most securities returns will rise, and the demand on the securities market is relatively strong, The effective boundary of risk portfolio will move up. In the process of controlling Internet financial risks, the enterprise management should timely complete the supervision and management system according to the actual situation of its operation.

Internet finance enterprises can set up risk monitoring institutions at the right time, use financial engineering tools to accurately handle and identify various financial risks, and prevent such risks from bringing economic losses to investors and enterprises. Internet finance is based on the continuous development of information technology. If information technology itself has certain risks, it will also lead to certain risks in Internet finance.

2.2 Practical Application of Financial Engineering in Internet Financial Risk Control

If the security of information technology is not guaranteed, and it is attacked and stolen by some illegal elements, it will certainly bring incalculable losses to Internet financial enterprises. Therefore, in addition to the different estimated parameters , The optimal trading strategy is similar to the general optimal consumption and investment wealth process , It is also a part of investment in risk assets , Part of the investment is in risk-free assets. However, the specific share is due to the risk-free asset price volatility. 's participation , The proportion of portfolio insurance investment discussed in Section 1 is different. Compared with the basic financial instruments, financial derivatives have stronger timeliness and flexibility characteristics. The rational and flexible application of financial derivatives can timely transfer the market risk and structural risk of the basic financial products.

The Internet finance industry applies big data, intelligent portrait and other technologies to match the risk level of financial products with the risk acceptance ability of investors, so as to manage and control different businesses through different departments. For the current popular mobile payment, we should strengthen the legislation, gradually improve the existing legal system, establish a fair and fair mobile payment system, and ensure the security of the generated electronic evidence and comply with the law, and also combine the forces of all sectors to carry out comprehensive supervision. It rarely occurs in real life, and more of it should belong to the third situation. However, the study of the first two situations is helpful to explain the third phenomenon. The third situation is a combination of the first two situations, or can be said to be composed of the first two situations.

3. CONCLUSION

The rapid development of Internet finance has brought vitality to the financial market. When trying to improve the internal risks of Internet finance, relevant personnel need to use the methods and tools of financial engineering to effectively grasp the development characteristics of the Internet financial platform. However, due to the openness and other characteristics of Internet finance, it has certain risks, and the existence of financial engineering can reduce these risks. By applying the methods and means of financial engineering, we can effectively reduce the financial risks of the Internet and promote the healthy development of China's financial market.

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