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Case Analysis and Future Expectations of Chinese Enterprises Suffering Heavy Losses in the International Futures Market: Take the Bank of China and Tsingshan LME as Examples

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Abstract. Affected by various factors such as COVID-19 epidemic and war, the world economic situation changes more frequently, which leads to increased instability in the international and domestic financial derivatives market. For the substantial changes in the international and domestic financial derivatives market, how to deal with sudden changes and analyze the failure cases in the change of financial derivatives is of far-reaching significance to the rapidly developing domestic financial derivatives market. By taking the Bank of China "crude oil treasure' margin call liquidation case and Tsingshan LME Nickel Futures Squeeze Case as the core of the study, this paper uses case analysis method to deeply study the possible problems and failures in the futures market under the condition of financial derivatives market instability and puts forward suggestions on how to deal with these problems. This paper analyzes the attributes and characteristics of China's 'crude oil treasure' products and nickel futures products, restores the event process, describes the impact of the event on investors, trading institutions and banks, and puts forward suggestions for improvement. The suggestions in this paper are as follows: First, the company and the regulatory department should strengthen risk supervision and management; Second, companies and investors should improve their professional capabilities.

1 Introduction

Financial derivative covered futures, forwards, swaps, options and exotics, financial derivatives are opposed to traditional financial commodities, based on the development of traditional financial commodities, whose price depends on the change of financial asset. With the deepening of economic globalization, investors have increasingly strong demand for financial derivatives, so the types and scale of financial derivatives are increasing. As shown in Figure 1, the volume of global on-floor futures and options trading has been on the rise in the past five years. The volume of global futures and options transactions in the first half of 2023 was 55.782 billion lots, an increase of 44.75% year-on-year and a record high growth rate compared with the same period last year.

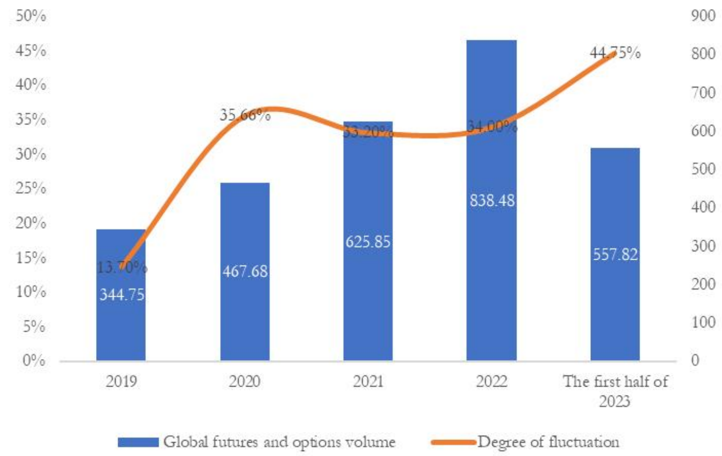

Fig. 1. 2019-2023 Global options and futures trading volume
Data source: Futures Industry Association [1-5].
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With the continuous growth of global futures and options transaction scale, the types of financial derivatives related to futures and options are also constantly increasing. Compared with European and American countries, although China's domestic futures market started late and developed relatively backward, the continuous opening of the financial market and the rapid development of the network economy have made the domestic futures market develop relatively rapidly, and the booming trend of the futures market makes more Chinese enterprises invest money in futures products. However, with the continuous development of the futures market, the uncertainty and complexity of the futures products are enhanced, and the risks of the futures products are increased. Correspondingly, the defects of the futures market are gradually emerging. Due to the lack of strict risk management system corresponding to the rapid development of the futures market and regulatory departments, as well as a large number of innovations in futures products but the lack of matching degree of specialization, the lack of professional ability of investors, together led to the occurrence of China's 'crude oil treasure' margin call liquidation event and the Tsingshan LME Nickel Futures Squeeze Case. In the past, most scholars started their studies with one case event, but this paper started from two events, carried out in-depth analysis from the two opposing situations of cornering futures markets, and made a more comprehensive analysis of the causes and effects of Chinese enterprises' losses in the futures market, so as to provide more in-depth suggestions for Chinese enterprises to avoid risks from multiple angles. Therefore, this paper chooses China's 'crude oil treasure' margin call liquidation event and the Tsingshan LME Nickel Futures Squeeze Case as typical cases to analyze, hoping to deeply analyze the causes and impacts of the cases under the background that the booming development of futures products does not fit the risk management level of the futures market trading institutions and regulatory departments, and provide ideas for Chinese enterprises to avoid risks in the diversified and unstable futures market. At the same time, it is hoped that the conclusions drawn from these two case studies can help the emerging and rapidly developing domestic futures market to better improve its risk management system, so as to make the healthy development of China's domestic futures market.

The remaining sections are arranged as follows: Section 2 is literature review and main body, including the analysis of China's 'crude oil treasure' margin call liquidation event and Tsingshan LME Nickel Futures Squeeze Case. Section 3 is conclusion.

2 Literature Review

With the expansion of the scale of the futures market, the relationship between the futures derivatives and the economy is getting closer and closer, and the fluctuation of the futures price has an increasing impact on the economic market and spot price. In view of the high-risk characteristics of futures, the academic community has also begun to pay close attention to the risk management field of futures.

Hilary Till argues that futures traders must implement strict risk management procedures [6]. The key factors to consider are the risk tolerance of investors, ensuring that customers do not exceed this tolerance, and understanding the price behavior of commodity futures prices and their potential explosive behavior to manage risk [6]. Moreover, Xianhua Fang and Wenya Lou proposed the concept of "risk corridor", which quantifies futures risk by analyzing the interval between the maximum risk and the minimum risk that investors can accept for financial derivatives contracts, so as to guide investors to reasonably assess risks and do a good job in risk management [7]. After that Sabri Boubaker, Zhenya Liu and Yaosong Zhan proposed that in the case of the rapid decline of crude oil futures prices, timely selling to control the risk is a better risk management method to avoid losses is a better risk management method to avoid losses [8].

To sum up, in terms of futures risk management, in-depth analysis is mainly carried out from investors and futures trading institutions. Therefore, based on such multiple perspectives, this paper adds the perspective of regulatory authorities, studies two typical cases, and puts forward effective suggestions. On the basis of theoretical analysis, more detailed conclusions are drawn through case analysis.

3 China's 'Crude Oil Treasure' Margin Call Liquidation Event

In January 2018, following the crude oil products of other banks, Bank of China launched the crude oil investment product - "Crude Oil Treasure" investment product based on the US WTI and the UK Brent crude oil futures respectively, all are denominated in US Dollar (USD) and Chinese Yuan (CNY), and began to provide domestic and foreign individual customers with personal account crude oil trading services linked to overseas crude oil futures.

3.1 Crude Oil Treasure" Product Basic Information and Characteristics

From the announcement on the official website of the Bank of China about the "crude oil treasure" product [9], it can be summarized that a major feature of the "crude oil treasure" product is non-leverage trading. It takes the form of margin trading and investors need to deposit 100% of the margin account of the "crude oil treasure" product investment trading opened by the Bank of China, and then they can carry out investment trading activities. The second feature is that it can be a two-way choice between long and short, so it is a better choice for investors who are new to futures investment. At the same time, unlike other futures products, it does not support physical delivery of crude oil, only cash delivery. This is related to its trading process. The crude oil futures products are CFD products, and the Bank of China earns potential profits by trading CFD. Therefore, after

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investors choose to go short or long, the Bank of China will first hedge the risks of the long and short transactions it receives. The remaining long or short transactions that cannot be hedged are carried out by Bank of BOC International Commodity Futures Co., LTD.

In the Chicago Mercantile Exchange (CME), and under the constraints of the relevant domestic legal system, “crude oil treasure” products only support cash delivery. In addition, compared with other futures products, it is more suitable for investors who are new to the futures market. The minimum trading unit of "crude oil treasure" futures investment product is 1 barrel, and the additional sale unit is 0.1 barrel, which is very small compared with the trading volume required by crude oil futures contracts. At the same time, the convenience and diversification of its purchase channels are also one of the major features suitable for novice investors. Moreover, the "crude oil treasure" product is T+0 trading which means it can be traded several times a day.

3.2 Crude Oil Treasure" Product Operation Process and Profit Model

Bank of China acts as a middleman in the trading of “crude oil treasure “products. First of all, after obtaining the overseas crude oil futures trading prices in CME, the bank quotes the futures prices for investors and discloses the risks of related products to investors. If the investors accept the risk content informed by the bank, they sign a short or long contract. After the Bank of China hedges the balance, real transactions are carried out through BOC International Commodity Futures Co., LTD.

The profit model of "Crude Oil Treasure" products is that Bank of China can earn profits by charging handling fees or transaction fees; secondly, because crude oil products can be traded in RMB and US dollar at the same time, it can earn profits through the exchange rate fluctuations between RMB and US dollar; thirdly, through the difference between crude oil products and WTI crude oil futures margin, it can use the remaining margin for savings or loans to generate income.

3.3 China’s ‘Crude Oil Treasure’ Margin Call Liquidation Event Process Motivation

From the perspective of market supply and demand to analyze, the COVID-19 pandemic has led to a sharp global recession, and global demand for crude oil continues to decrease, resulting in a decline in crude oil prices and crude oil futures prices in the international market. As can be seen from Figure 2, due to the serious oversupply of the global crude oil market, the international crude oil futures price has fallen from above 50 US dollars.

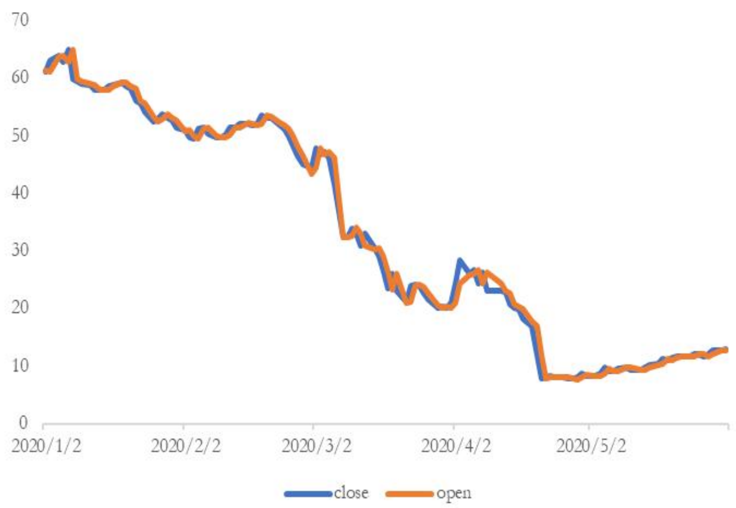

Fig. 2. WTI crude oil futures price
Data source: Investing [10]
Photo credit: Original

To stabilize crude oil prices, in early March, OPEC, led by Saudi Arabia, proposed "OPEC +" 23 countries to jointly reduce production to support oil prices. At the beginning, Russia underestimated the huge impact of the COVID-19 pandemic on oil prices, or refused to reduce production as a bargaining chip to bear less of the production reduction share [11], or after economic sanctions oil exports as its main domestic economic driving force, crude oil production will have a huge impact on the Russian economy and other reasons [12], and the negotiations broke down. Subsequently, Saudi Arabia unilaterally increased crude oil output, the balance of supply and demand was broken, and the supply exceeded the demand, which made the crude oil market price continued to fall, resulting in the price of crude oil sold by Saudi Arabia to Europe as low as \$10.25 / barrel [11]. Due to the continuous decline in oil prices, countries take advantage of low oil prices to store a large number of crude oils, supply more demand less countries crude oil storage quickly tends to be full, by the middle of April, almost all crude oil storage facilities in the United States are full of crude oil. From the perspective of individual investors, due to the high cost of preserving crude oil and its permit transportation, it becomes difficult to deliver crude oil when the crude oil storage in various countries is about to be full, and the long bulls who have bought the bottom before need to sell the contract in the last trading day to close the position, but the institutions with the physical delivery capacity will not buy crude oil because the inventory is full, so the investors of crude oil futures prefer to sell the contract at a negative crude oil price [12]. As a result, oil prices fell again [12]. A large number of WTI crude oil futures contracts for May delivery were closed regardless of the cost, and on April 20, the WTI crude oil May contract closed at -37.63 US dollars/barrel, the first time in history there was a negative oil price, and the spot market fell to the lowest of 10 US dollars/barrel [11].

From the perspective of the Chicago Mercantile Exchange and the Bank of China, the Chicago Board of Trade changed the circuit breaker price for crude oil futures on March 19, allowing for greater price volatility in crude oil futures contracts during trading [12]. Since then, the CME has made a series of changes to the trading rules, first changing the trading system code so that crude oil futures can be traded at a negative price, but the following days after the operation went into effect, the content of this change was stress tested [12]. The Chicago Mercantile Exchange's practice of giving investors a short time to react when futures contracts are traded is inappropriate compared to past practice. However, due to the lack of sensitivity to risks, the Bank of China did not pay attention to and react correctly when the CME clearing house revised the trading rules, which led to the failure to respond in time when the crude oil futures price continued to fall, resulting in heavy losses for investors.

From the perspective of regulatory authorities, the Financial Stability and Development Committee held the 28th meeting after the crude oil treasure incident and proposed to pay attention to the risk of financial derivatives, prevent and control the risk of related financial products, and the administrative penalty decision of the China Banking and Insurance Regulatory Commission on the crude oil treasure product incident to the bank of China and warning fines. However, the punishment measures of the regulatory authorities are relatively delayed, the regulatory mechanism is not perfect, and the risk loss of crude oil products is not timely monitored, and the risk of crude oil products is not regulated.

3.4 Economic Consequence

Investors suffered heavy losses. Over 60,000 investors purchase the Bank of China's "crude oil treasure" products. However, the percentage of long and short investors is extremely out of balance, with only 5% of short orders and up to 95% of multi-orders [12]. As a result, the majority of long investors have experienced significant losses. Incomplete data indicates that approximately 60,000 customers own "crude oil treasure" products from the Bank of China, of which roughly 20,000 have an investment amount of less than 10,000 yuan, roughly 20,000 have an investment amount of between 10,000 and 50,000 yuan, and roughly 20,000 investors have an investment amount exceeding 50,000 yuan [12]. A signed agreement between the investors and the Bank of China states that over 60,000 investors lost roughly 4.2 billion yuan in their margin accounts [12]. In addition, the agreement requires investors to return 5.8 billion yuan to the Bank of China, meaning the total amount of losses incurred by investors is approximately 10 billion yuan [12].

At the same time, the credit of Chinese banks has been questioned by the public, and the bank's credit and economic profits have been reduced.

3.5 Optimization Suggestion

According to the in-depth analysis of the causes of this incident, the main suggestions are put forward. For commercial banks, the high-risk characteristics of financial derivatives need to be paid attention to. Commercial banks should strengthen their sensitive perception of risks in the futures market, be alert when the futures market price fluctuates greatly, and timely remind investors to reduce losses. In terms of the design of futures products of commercial banks, banks should first disclose the risks of futures products in detail, continue to follow up, and carry out forced liquidation operations when the balance of investors' margin accounts falls to a certain amount to reduce investors' losses. Commercial banks need to be aware of how liquidity risk affects the futures market. Bank of China is expected to hedge investors' long and short positions around one week prior to the contract settlement date in accordance with standard trading procedures for the market [12]. The remainder of the time will be devoted to actively finding trading partners for the unhedged net position on international exchanges [12]. But because the "crude oil treasure" product's trading end was set for April 20, which is near the linked futures contract's delivery date, and because there was very little market activity at that time and almost all investors had found a trading partners, it was challenging to close the position at the normal prices[12]. Therefore, the futures products of commercial banks should take into account the liquidity risk of futures market in the design of the trading day, and strengthen the identification and management of liquidity risk.At the same time, in terms of product marketing of commercial banks, it is necessary to strengthen the supervision of influence strategies, clearly classify the risk of financial products, and sell financial derivatives of different levels to investors of corresponding levels.

For investors, investors should strengthen financial literacy, timely identify risks, correctly understand the suitability of their professional ability and financial derivatives risks and choose financial derivatives that are compatible with their professional ability and risk bearing ability.

For regulatory departments, risk supervision and management should be strengthened, the risk fluctuations of financial derivatives should be discovered in time, and the risk should be punished in time to reduce investor losses.

4 Tsingshan LME Nickel Futures Squeeze Case

4.1 Introduction of Tsingshan Group

Tsingshan Group controls a large amount of nickel resources, its Indonesia nickel mines alone accounts for about 10% of the world's nickel production. In 2021, Tsingshan Group's nickel ore production has reached 600,000 tons, accounting for a quarter of the world's nickel ore production [13], which also makes it necessary to hedge such products in the futures market. (1) Tsingshan Group produces nickel, and shorting can hedge risks, manage the risk of their spot positions [14] and avoid price declines. Because the LME market is liquid, shorting the LME international market can have enough trading partners to absorb the short orders it creates, while the domestic futures market cannot absorb this amount of nickel [13]. (2) If the futures market requires spot delivery, Tsingshan Group only needs to use electrolytic nickel from Russian customers for delivery, eliminating the operation of currency exchange [13] and reducing costs. Therefore, Tsingshan Group chose to hedge about 200,000 tons of short orders in the LME market, and the delivery time was March 9 [14].

4.2 Event Process

After the conflict between Russia and Ukraine, the LME was affected by political sanctions that banned the delivery of Russian nickel [14], so Russian nickel could not be supplied to the market.

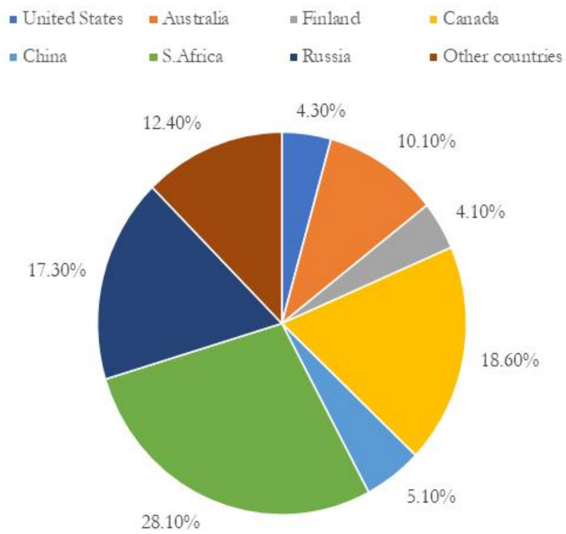

Fig. 3. Nickel ore distribution proportion
Data source: China Business Information Network [15].
Photo credit: Original

From the global nickel ore production and storage scale and nickel ore distribution chart (Fig. 3 & 4), it can be seen that Russia's nickel ore accounts for a large proportion of the world. As a result, after Russian nickel could not be supplied, demand exceeded supply and nickel prices continued to rise. At the same time, the international capital represented by the world commodity giant Glencore of Switzerland is using the panic of nickel supply shortage caused by the conflict between Russia and Ukraine to implement capital sniping to Tsingshan Group with a huge nickel short order [13], through the large purchase of pure nickel in the international market, so that Tsingshan Group cannot buy spot nickel in the market, which also leads to Tsingshan Group cannot carry out spot delivery, then International capital forces continue to buy more positions, making futures nickel prices continue to rise. Thus, on March 8, the LME nickel price opened at just under $50,000 and then soared to $101,365 / ton [14]. Within three hours, the price of nickel almost doubled, rising 274.3% from the opening price on March 4, reaching the highest price ever on the LME. This is a nickel price action that the LME has never seen before in its history [14].

Although Tsingshan Group has rich nickel resources, the high-ice nickel produced by Tsingshan Group is inconsistent with the spot varieties required by the delivery of LME futures contracts, which cannot form a perfect hedge and cannot sell its group's commodities directly to multiple parties. In order to solve this short force, Tsingshan Group needs to pay more margin to buy more short orders to cope with the long attacks. That has put Tsingshan under enormous financial pressure.

However, after the crisis of a sharp rise in nickel prices, LME took a series of countermeasures. It repealed all transactions on March 8 and postponed nickel trading from March 9, and limited the decline and increase of nickel prices (5%), The margin that Tsingshan Group needs to make up also decreases, and the delayed delivery date also gives Tsingshan Group more time to convert products into directly deliverable spot. The Chinese government has also helped Tsingshan raise some spot nickel for delivery.

After that, through active negotiation, Tsingshan Group reached a silent agreement with the syndicate of creditors of the Futures Bank. With the recovery of nickel futures prices in the market, Tsingshan Group needed to reduce its holdings in a reasonable and orderly manner, and Tsingshan Group's losses were effectively controlled [17]. The agreement buys Tsingshan Group more time to resolve its problems. If the nickel price falls in the subsequent market, Tsingshan Group can reduce its position at a suitable point, and if the subsequent nickel price remains high, Tsingshan Group can also sell its nickel products at a high price to minimize its own losses [17].

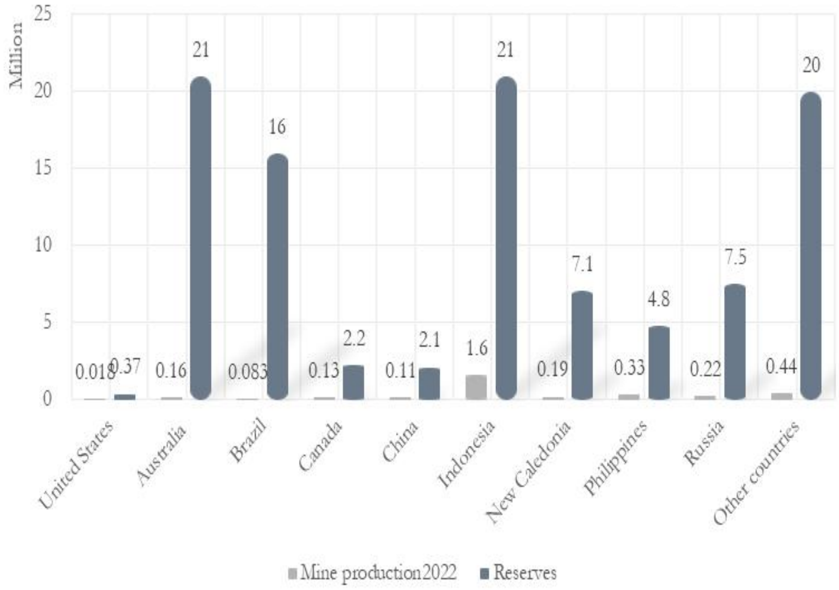

Fig. 4. Global nickel production and reserves
Data source: United States Geological Survey [16].
Photo credit: Original

4.3 Economic Consequence

Tsingshan Company capital loss at the same time London nickel price fluctuations also affected the domestic Shanghai nickel futures price fluctuations, affecting the domestic nickel futures market. It has a huge impact on the financial derivatives market and the real industry related to nickel.

4.4 Optimization Suggestion

As for the company, the company should strengthen risk management, improve the company's risk management system, pay close attention to the domestic and foreign situation and the conduct of financial derivatives, and improve the sensitivity of risk identification. It should have a deeper understanding of futures expertise, participate in the hedging of appropriate futures varieties, and can transfer risks or hedge transactions in a timely manner.

For the futures exchange (LME), it is necessary to strengthen the sensitivity of market risks, enhance the awareness of prevention, and pay attention to the risk events that have a trend in time. Then, it should strengthen the prior risk prevention work, when the LME's own nickel inventory continued to decline and the extent was large, it did not give enough attention to the market warning in February 2022 when there were related reports of nickel futures confrontation between the two sides, which shows that the LME should strengthen the prior risk prevention work [17]. Moreover, it should strengthen the supervision of abnormal capital sniping transactions and follow the example of other exchanges (CME) to strictly identify and manage some trading activities that may cause or accumulate the risk of short-selling.

5 Conclusion

Although the international and domestic futures markets have been in a stage of rapid development, and the types of futures products continue to increase, the development history of risk management measures for the high-risk characteristics of futures is too short, the risk management system is not strict enough, and there are some flaws and problems in investors, banks, regulatory authorities and futures exchanges. This paper adopts the case analysis method and takes China's 'crude oil treasure' margin call liquidation event and Tsingshan LME Nickel Futures Squeeze Case as examples to analyze the problems in risk management during the volatility of the futures market, and makes an in-depth analysis of these problems from the perspectives of the market, investors, banks, futures trading institutions and regulatory authorities, and puts forward the following suggestions: First, institutions and investors should strengthen financial professional capabilities, identify risks in a timely manner, and choose futures products that match the risk level of their own capabilities; Second, banks should strengthen risk supervision in product design, sales strategy, risk disclosure and other aspects to improve the sensitivity to risk; Third, futures trading institutions should strengthen pre-risk prevention work; Fourth, the regulatory authorities should improve the risk supervision system.

Finally, previous scholars paid more attention to futures risk management from the perspective of investors and futures trading institutions, but as mentioned in this paper, the regulatory authorities also have risk management defects in the aspects of pre-risk management and prevention, futures product design and other aspects. In the future, the above perspectives can be further refined to promote in-depth research on futures risk management. To help the international and domestic futures markets develop healthily.

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