

Risk Management Case Analysis of ICBC's "Crude Oil Treasure" Incident

Zeyuan Wang *

Nanjing University of Science and Technology, Nanjing, China

* Corresponding Author Email: wangzeyuan475@gmail.com

Abstract. Driven by the marketization of interest rates and technological innovation, commercial banks in China continue to innovate various financial services businesses and devote more attention to attracting customers to purchase various investment and wealth management products in order to expand sources of bank performance and gain more benefits. In 2018, paper crude oil-linked wealth management products emerged. Paper crude oil products are linked to the prices of international crude oil futures contracts. The products feature controllable risks and relatively high returns, which are very popular among large numbers of customers. However, despite the continuous expansion of China's financial derivatives trading volume, the categories of derivative products and regulation still have many limitations. The development of innovative paper crude oil-linked products is not perfect and has many potential risks, which are highly susceptible to market fluctuations. Taking China Bank's "Crude Oil Treasure" product as the research focus, this paper analyzes the massive loss incident that occurred in late April 2020 through case study analysis and qualitative analysis methods. It is divided into four parts. The introduction part explains the research background, significance, content, methods and innovations and inadequacies of this paper. The first part sorts out the background and process of the "Crude Oil Treasure" case at China Bank and elaborates on the operating principles of this product. The second part analyzes the "Crude Oil Treasure" case in detail. It first focuses on the problems in the product's trading liquidity, domestic and international time differences and product promotion. Then it focuses on the internal and external causes of the case, discussing external factors such as international crude oil market turmoil and futures trading characteristics, and internal factors such as product design, risk control and lack of experience. It also evaluates the hedging strategy, contract design and compliance of the "Crude Oil Treasure" product. The third part mainly analyzes the impacts of the "Crude Oil Treasure" rollover incident and China Bank's subsequent response measures. The fourth part puts forward certain countermeasures and suggestions from the perspectives of bank management, investors and regulatory agencies to prevent such incidents from recurring based on the case analysis.

Keywords: Bank of China "Crude Oil Treasure"; risk management; crisis case study.

1. Introduction of ICBC's "Crude Oil Treasure" Case

On April 21, 2020, the settlement price of the May contract for West Texas Intermediate crude oil futures (hereinafter referred to as WTI 05 contract) on the Chicago Mercantile Exchange was minus \$37.63/barrel, recording a negative value for the first time. In fact, since late March, international crude oil futures prices including U.S. crude oil have continued to fall. Many individual investors in China hoped to "bottom fish" the oil price. China's "Crude Oil Treasure" product issued by the Industrial and Commercial Bank of China as a receipt product for crude oil futures trading became a tool for many investors to bottom fish crude oil. However, the settlement price of the WTI 05 contract at expiration of minus \$37.63/barrel not only led to the principal of the long investors in China's "Crude Oil Treasure" being completely lost, but also owed huge debts.

The Industrial and Commercial Bank of China had always been a representative of "low risk" state-owned banks. However, its performance in the "Crude Oil Treasure" financial product incident shocked investors and sparked major public debate, shattering its long-established image of stability and low risk overnight. The key reason it aroused social questioning was that there were problems in risk management, making this a bloody lesson left on state-owned commercial bank wealth management products.

ICBC "Crude Oil Treasure" was a futures contract trading product issued by ICBC that tracks domestic and international crude oil prices. It included WTI and Brent crude oil products. Individual investors could buy long or short positions by depositing margin in their "Crude Oil Treasure" accounts. For long positions, there were three options at contract expiration: physical delivery, rolling/extending to the next month, or closing the position. Physical delivery for WTI 05 contracts was scheduled for April 21st in Cushing, Oklahoma. But both ICBC and investors lacked the ability to do physical delivery due to full storage facilities and lack of transportation. Rolling/extending requires first closing the current position and then opening the next month's contract. ICBC set the rolling deadline as April 20th, just one day before expiration. As WTI prices fell throughout March and April due to oversupply, many investors held long positions hoping for a rebound. ICBC did not impose position limits like other banks. On April 20th, ICBC froze accounts for rolling. But without counterparty trades, it could not roll positions and had to close at the settled price of -\$37.63, causing major losses. Other banks like CCB and CIB set earlier rolling deadlines and allowed investors to roll positions, avoiding losses when prices fell further. ICBC's delayed rolling caused a liquidity issue.



Fig 1. WTI Crude Oil Futures Price Fluctuation Chart

It can be seen that since the first and second options were not viable, the long investors in ICBC's "Crude Oil Treasure" were trapped in a negative cycle and forced to close their positions through the third method at the settlement price of futures, ultimately resulting in heavy losses.

The cyclic process is illustrated in the diagram:

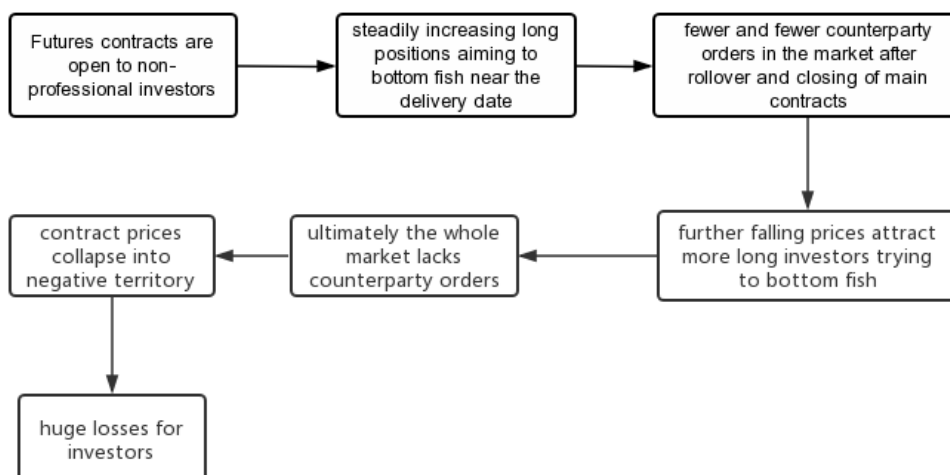


Fig 2. Flow-process Diagram

2. Impact of this Incident on the Industrial and Commercial Bank of China

2.1. Financial Analysis

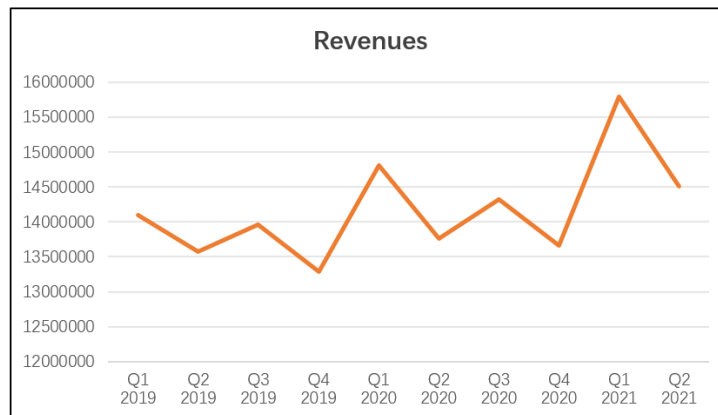


Fig 3. Trend chart of total operating revenue

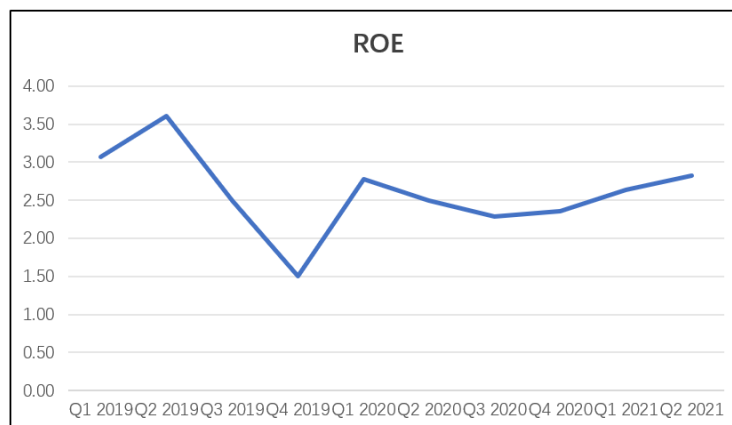


Fig 4. Trend chart of ROE

Affected by the "Crude Oil Treasure" incident, ICBC's total profit for the first half of 2020 was 983.69 billion yuan, a decrease of 24.65% compared with 1,305.41 billion yuan in the same period of 2019, hitting the lowest point in total profit for the past five years. With the passage of time, the impact of the incident gradually faded away. In the first half of 2021, the total profit reached 1,277.63 billion yuan, an increase of 29.88% year-on-year, recovering ICBC's normal profit level. It can be seen that the 2020 crude oil treasure incident significantly weakened ICBC's profit-making capabilities.

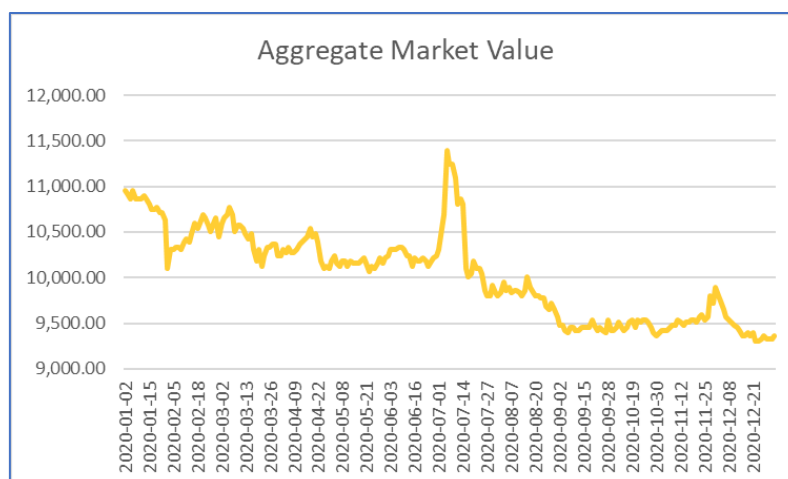


Fig 5. Trend chart of aggregate market value

After ICBC's "Crude Oil Treasure" incident was exposed, it triggered a chain reaction in the capital market. The share price of Bank of China (601988) saw a sharp decline. Data showed that on April 24, 2020, the share price closed at 3.43 yuan per share, with a cumulative decline of 3.65% since the incident, vaporizing market value of 38.3 billion yuan. This incident caused ICBC to suffer widespread questioning from customers and tremendous social public opinion pressure. Its other wealth management products launched afterward also seem to have encountered a "trust crisis", highlighting the importance of risk management for the normal operation and healthy development of companies.

2.2. Investors Withdraw

As the main victims of the rollover incident of Crude Oil Treasure, ordinary investors have been greatly affected in their lives. It must be said that Bank of China gave investors a vivid and realistic lesson about risk.

For most investors who bought the Crude Oil Treasure product, this experience was essentially paying for a lesson at a huge cost. Before this investment, many people did not understand financial derivatives, let alone derivatives linked to crude oil with high volatility. Their judgments about future trends were entirely based on habitual thinking without any theoretical basis. For the abnormal event of crude oil prices suddenly falling to around \$10, investors would habitually think that prices would rebound significantly to normal levels in the future. Even if it did not return to the previous \$50, reaching \$30 would not be difficult. Therefore, they decided to buy with the expectation of earning decent profits by selling at market prices in the future. It was this kind of thinking that caused most investors to choose the long position in crude oil futures trading, which increased the risk coefficient of crude oil futures that inherently carried trading risks. According to the final settlement price of Crude Oil Treasure, it is estimated that nearly \$4 billion of foreign exchange disappeared in China overnight, which is equivalent to nearly 30 billion yuan based on the exchange rate at that time.

Although many investors cannot accept this fact from a conceptual level and even have a sense of resistance, in fact, by signing the purchase contract, they have already expressed recognition of the design of the Crude Oil Treasure product. Even if there was a loophole in the product design that led to rollover, investors must accept losses from gambling because the fundamental reason was their lack of risk awareness and blind investment. It can be seen that whether ordinary investors or those with certain status, they would make judgments about the future trends of crude oil prices due to lack of professionalism, and they could not extricate themselves from Bank of China's enthusiastic marketing. So at the time of a sharp decline in crude oil prices, they decided to directly buy the Crude Oil Treasure product. It is believed that after this incident, investors will realize the need to be prudent in wealth management and investment risks, and will no longer casually purchase financial products. In making any investment, they will be wary of hidden motives and learn self-protection.

3. Risk Management Capabilities of Industrial and Commercial Bank of China

3.1. Failure to balance liquidity risk and profitability

The original intention of establishing a futures trading market is to help buyers and sellers lock in prices and reduce price volatility risks. However, trading itself also involves various risks. From the perspective of risk management, one important reason for the huge losses of long positions in "Crude Oil Treasure" this time was that ICBC's rolling trading design was unreasonable. ICBC set the rolling date as the day before the settlement date. When the futures contract is close to delivery, most speculators have closed positions in advance or rolled positions to the next contract and continue to hold positions, resulting in gradual shrinkage of liquidity and thus causing significant fluctuations in futures prices and difficulties in unifying futures contract trading prices with current prices.

Of course, from another perspective, ICBC's relatively late rolling date also provides investors with greater flexibility of choice and is more likely to increase investors' profits. For example, Bank A specifies rolling of the WTI05 contract on Date X, while Bank B's rolling date is X+5 days. If on

Date X, the futures price is \$20/barrel, and the long position investor of Bank A opened the position at \$25/barrel, then closing on Date X would mean a loss of \$5 per barrel. And if the investor estimates that futures prices may rise to \$30/barrel in the next 3 days, then assuming Bank A does not roll on Date X and futures prices do rise in the next 3 days, the investor may turn losses into profits. This shows that a rolling date close to the delivery date can give investors more choice space to attract more customers and increase bank income. In this incident, ICBC failed to balance risk and return properly, focusing more on attracting customers to increase bank income (profitability) while neglecting liquidity risks, which is typical of damaging long-term strategies and corporate reputation for short-term performance.

3.2. Lack of communication between investors and financial institutions in risk information

There is an information asymmetry problem between financial intermediaries and investors. As known from the ICBC "Crude Oil Treasure" case, it did not do enough in terms of suitability management and information disclosure. ICBC's launched "Crude Oil Treasure" product is not a trading product that it has pricing and estimation capabilities itself, nor is its purpose physical delivery but rather speculative commodity futures trading products with huge risks. While selling immature high-risk products to non-professional investors, ICBC failed to inform investors that "Crude Oil Treasure" is a high-risk level futures trading product during sale of financial products, indicating the problems in risk information communication between financial institutions and investors.

3.3. Lack of risk assessment capabilities

In early April 2020, the Chicago Mercantile Exchange had already announced its decision on negative oil prices and subsequently suggested that recent market fluctuations may result in some US energy commodities futures contracts being settled at negative or zero prices, and the options on these commodity futures contracts may also be expressed at negative or zero exercise prices. The statement did not affect the normal operation of all trading and settlement systems in the event of such an occurrence, which was an obvious warning sign. However, ICBC did not attach sufficient importance to this information. It can be seen that ICBC may not have estimated the amount of losses to investors that may be caused by negative futures prices in advance. As negative prices in crude oil futures were unprecedented historically, it was regarded as a low-probability event and the huge trading risks contained were ignored.

4. Subsequent Handling of the Case

ICBC explicitly stated that it will fully assume responsibility for the losses caused to customers by the forced liquidation of "Crude Oil Treasure" transactions, and refund the margin according to the actual investment amount of each customer. Since most customers have relatively weak capabilities in risk investment, their actual investment totals must not exceed 10 million yuan, so the company can refund all 20% of the margin to them. For professionally invested investors with annual investment totals exceeding 100 million yuan, 20% of the loan margin will not be refunded. Investors dissatisfied with ICBC's solution can consider taking civil litigation to safeguard their legitimate rights and interests, and ICBC will comply with the final result.

On December 5, 2020, the CBIRC published the final handling result of ICBC's crude oil treasure product risk incident on its website: ICBC and its branches were fined a total of 505 million yuan; two former general managers of ICBC Global Markets Department were both given disciplinary warnings and fined 5 million yuan; two deputy general managers and senior traders of ICBC Global Markets were also given warnings and fined 4 million yuan.

5. Risk management issues

5.1. Risk management issues of Bank of China

5.1.1 Failure to balance liquidity risk and profitability.

The original intention of establishing a futures trading market is to help buyers and sellers lock in prices and reduce price fluctuation risks. However, trading also contains various risks. From the perspective of risk management, one important reason for the huge losses of long positions in "Crude Oil Treasure" this time was that the rollover trading design of Bank of China was unreasonable. Bank of China set the rollover date as the day before the settlement date, with the rollover date close to the delivery date. When the futures contract is close to delivery, most speculators have already closed out or rolled over their positions to the next contract and continued to hold positions, leading to a gradual shrinkage of liquidity and thus significant fluctuations in futures prices and difficulties in unifying futures contract prices with current prices.

Of course, from another perspective, Bank of China's relatively later rollover date also provided investors with greater flexibility and increased the possibility of profit for investors. For example, Bank A stipulates that the WTI05 contract will be rolled over on Date X, while Bank B's rollover date is X+5 days. If on Date X, the futures price is \$20/barrel, and the opening price of the long position investor of Bank A is \$25/barrel, then closing the position on Date X will lose \$5 per barrel. While the investor estimates that the futures price may rise to \$30/barrel within the next 3 days, so assuming Bank A does not roll over on Date X, and if the futures price truly shows an upward trend 3 days later, then the investor may turn losses into profits. This shows that a rollover date close to the delivery date can give investors more space for choices, thereby attracting more customers and allowing Bank of China to generate more income. In this incident, Bank of China failed to balance risks and returns properly and paid more attention to attracting customers to increase bank income (profitability) while ignoring liquidity risks, which is a typical case of sacrificing long-term strategic goals and corporate reputation for short-term performance.

5.1.2 Lack of risk information communication with investors.

There is an information asymmetry problem between financial intermediary service institutions and investors. Information asymmetry refers to the situation where the parties to a market transaction obtain information to different degrees, making one party clearly superior or inferior. Financial derivatives are highly specialized financial products that contain both financial and legal knowledge, and there is a serious phenomenon of information asymmetry, with product designers, operators and intermediary service institutions having information advantages, while investors are in an information disadvantage position. An important factor affecting investors' investment decisions is information asymmetry, and the information disclosed by financial derivatives becomes a key factor determining investors' future gains or losses. From the China Bank "Crude Oil Treasure" incident, it can be seen that the case was very inadequate in terms of suitability management and information prompts. The "Crude Oil Treasure" product launched by China Bank was not a trading product with its own pricing and estimation capabilities, and its purpose was not physical delivery either. It belonged to a speculative commodity futures trading product. The long and short positions essentially engaged in a zero-sum gamble with huge risks. However, China Bank sold the immature and inherently risky "Crude Oil Treasure" product to non-professional investors without informing investors that "Crude Oil Treasure" was a high-risk futures trading product at the time of marketing the financial product. This shows that there are many problems in the risk information communication between financial institutions and investors.

5.1.3 Lack of risk assessment capabilities.

Risk assessment is an important part of risk management, which refers to the process of evaluating and estimating the possibility of risk occurrence and expected gains or losses after risk planning and identification, including quantifying the probability and severity of losses from risks (probability and

degree of gains). Therefore, the expected loss amount of a certain event after it occurs can be quantified as "the absolute loss amount of the event \times the probability of the event occurring". Specifically, events with relatively high absolute losses and high occurrence probabilities are usually defined as "gray rhinos", while events with relatively high absolute losses but low probabilities that are difficult to predict are defined as "black swans". Only by quantifying the expected loss amount of events can effective measures be taken to avoid risks.

In early April 2020, the Chicago Mercantile Exchange had already announced its decision on negative oil prices and subsequently indicated that recent market volatility may cause some US energy asset commodity futures contracts currently being traded to be settled at negative or zero prices, and option contracts on these commodity futures contracts may also be expressed with negative or zero exercise prices. The statement indicated that such occurrences would not affect the normal operation of all trading and settlement systems, which was an obvious warning signal. However, Bank of China did not pay sufficient attention to this information. This shows that Bank of China may not have estimated the investor losses that could be caused by futures prices going negative in advance. Due to the fact that negative oil futures prices have never occurred historically, it was considered a low probability event and the huge embedded trading risks were ignored.

5.2. Risk management issues of regulatory authorities

5.2.1 Failure to accurately define the product.

The financial innovation product "Crude Oil Treasure" sold by Bank of China this time was not the wealth management product as advertised. According to Article 12.1 of the Measures for the Supervision and Administration of Commercial Bank Wealth Management Business, the head office of a commercial bank shall centrally handle and register wealth management products sold by it in the National Banking Industry Wealth Management Information Registration System. However, no relevant registration information of the "Crude Oil Treasure" product could be queried in this system. In fact, "Crude Oil Treasure" was located in the boundary area between the supervision of banks by the CBIRC and the supervision of securities markets by the CSRC. It did not fall under the jurisdiction of the CSRC, and the CBIRC also lacked sufficient professional capabilities for comprehensive regulation over it.

5.2.2 Failure to conduct legal and compliance reviews in accordance with relevant laws.

In fact, Bank of China may not have had the legal basis for futures trading of the "Crude Oil Treasure" product.

On July 15, 2004, the CBIRC clarified in its Reply on Issues Concerning Commercial Banks' Engagement in Derivative Product Trading Business: "Commercial banks should, in accordance with the Interim Measures for Administration of Futures Trading and other relevant systems, provide hedging services to investors for a few quality futures trading products, and shall not engage in speculative activities." Obviously, Bank of China did not actually have the qualifications to engage in speculative (non-hedging) futures trading products such as "Crude Oil Treasure".

5.2.3 Failure to conduct effective day-to-day supervision and inspections.

During the product operations, since "Crude Oil Treasure" was linked to overseas financial derivatives, with overseas investment targets, regulatory authorities were unable to timely obtain product-related price information, increasing the degree of information asymmetry. They could only adopt limited supervisory measures and failed to implement practical and effective supervision.

6. Insights and Suggestions

Regarding the problems existing in the risk management process, we put forward the following improvement suggestions from the perspectives of financial institutions and regulatory agencies:

6.1. Financial institutions

6.1.1 Improve product rolling design and strengthen quota control

Under the current circumstances of unstable international oil prices, imbalanced supply and demand, limited storage space, and rare physical deliveries, attention should be paid to setting the rolling date terms as far away from the physical delivery date as possible to reduce liquidity risks. In addition, financial institutions need to regularly review and update risk exposure limits according to the scale of long and short positions, formulate quota monitoring and overload handling procedures to prevent huge long or short positions from causing inability to close positions.

6.1.2 Pay attention to investor assessment and improve transparency of information

Investor account opening is the first line of defense in controlling risks in crude oil futures market transactions. Financial institutions should strengthen audits and prompts on investors' eligibility, capital sources and credit status. At the same time, banks should review the risk level classification of products and customers annually to form dynamic management. Sales departments must truthfully inform investors of products' profitability and risks to help investors make reasonable judgments. Financial institutions need to conduct business prudently, improve risk matching, strengthen management of eligible investors, establish higher investment thresholds, and achieve proper matching of products and customers as well as sufficient risk disclosure.

When market prices fluctuate significantly, increase the frequency of re-estimating futures trading product prices, timely and accurately prompt risk information to customers through multiple channels, and clarify key risk points to customers. This enables investors to make rational investment plans based on the information and actively respond to liquidity and market risks of futures to control futures trading risks within a certain range and reduce unnecessary capital losses.

6.1.3 Pay attention to risk assessment.

Currently, various financial risks are magnified infinitely under the impact of the global epidemic. Financial institutions must highly concern and guard against various risks under the international financial situation. Risk awareness, screening, monitoring and diagnosis should follow the principles of comprehensiveness, integration, moderation and institutionalization. A risk early warning indicator system should be established to dynamically monitor risk conditions and price fluctuations in real time, compare indicator values with early warning thresholds, and set early warning signals and level classifications to guard against not just "gray rhinos" but also "black swans".

6.2. Regulatory agencies

6.2.1 Continuously improve relevant laws and regulations

When commodity futures trading takes place, regulatory agencies need to strengthen the refinements of legal system contents, especially propose professional laws and regulations targeting unregulated links in commodity futures trading, establish a unified regulatory framework, subject all links of commodity futures trading to legal constraints, and ensure all types of differentiated derivatives to be fully covered by supervision. Improve laws and regulations on legitimacy, compliance review, approval and filing of trading products, perfect commodity futures trading and settlement systems, such as forced closeout, daily monitoring, margin systems, account management, sufficient disclosure of trading information, major shareholder reporting, circuit breakers and suspension of futures trading. Strengthen financial institutions' risk management reporting systems and enhance communication between financial institutions and domestic and foreign information users.

6.2.2 Establish a special regulatory agency

Regulatory agencies can set up agencies aimed at protecting investors, grant them corresponding powers, step up efforts and comprehensively safeguard investors' legitimate rights and interests in transactions. Especially restrain speculative business activities of large financial institutions in futures

contracts, constantly enhance supervision and management of commodity futures trading products in the capital market, conduct quota management on long positions in delivery months and the month before delivery dates, and authorize regulatory agencies to require trading institutions to suspend order receipt when cumulative long or short positions reach an upper limit.

6.2.3 Grasp dynamic information in a timely manner

Regulatory agencies need to establish a scientific and rational technical analysis system to dynamically collect and analyze various data and information of financial futures trading, strengthen day-to-day regulation and cross-border supervision to effectively prevent risks.

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