



Study of Speculative Trading Risks Based on Example of Short Squeezing

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ABSTRACT

Financial derivatives are essential hedging tools in modern financial markets. Since the 1990s, China's over-the-counter derivatives market has developed rapidly, occupying an important position in the world and playing an important role in economic and financial development. However, the open development of the derivatives market also faces risks. From the perspective of international markets, the overuse of poorly managed derivatives markets and overdevelopment that does not match regulatory capacity can generate risks in many ways. The opening of China's derivatives market to foreign financial entities also poses a potential systemic risk, which may threaten national financial security in serious cases and requires high vigilance. General financial products and simple derivatives form complex derivatives by nesting various complex structures with high leverage and betting characteristics, which can pry the financial market or become a tool to manipulate the financial market under special circumstances, thus affecting financial institutions and impacting the financial system. Based on the current situation of the development and regulation of China's derivatives market, the cases of overseas hedging losses and the potential systemic risks that may be increased by financial opening, it is suggested that the planning of the development and opening path of China's derivatives market and the regulatory system can be further improved to prevent and control the accumulation of potential systemic risks.

Keywords: *Financial derivatives, Systemic risk, Prevent, Control.*

1. INTRODUCTION

1.1. Background

Financial derivatives are an essential hedging tool in modern financial markets. since the 1990s, China's OTC derivatives market has developed rapidly, occupying an important position in the world and playing an important role in economic and financial development. The rapid development of China's OTC derivatives market. in the first half of 2021, the turnover of futures and options in mainland China was 3.716 billion lots, accounting for 12.9% of the total global futures and options turnover, an increase of 1.4 percentage points over the same period of the previous year; the turnover of commodity futures and options in mainland China was 3.656 billion lots, accounting for 69.6% of the total global commodity futures and options turnover, an increase of 14.4 percentage points over the same period of the previous year This represents an increase of 14.4 percentage points

over the same period last year. Meanwhile, the over-the-counter derivatives market also developed rapidly. in 2020, the cumulative turnover of the interbank RMB interest rate derivatives market was RMB 19.9 trillion, up 6.8% year-on-year. in 2019, the total turnover of interbank OTC derivatives was about RMB 138.4 trillion, of which foreign exchange derivatives accounted for the highest proportion, with an annual cumulative turnover of about RMB 119.8 trillion, accounting for 20.3% globally; the RMB interest rate derivatives market the cumulative turnover of RMB interest rate derivatives market was RMB 18.6 trillion, accounting for 0.65% of the global market. Data from the Securities Industry Association shows that in 2020, the OTC financial derivatives business of domestic securities companies added a total notional principal amount of RMB 4.76 trillion, with a cumulative total of 110,000 transactions.

1.2. Related Research

Many economists have defined the concept of short squeezes and analyzed each stage of this operation at a technical level. Jarrow investigated market manipulation trading strategies by large traders in his article and expounded in detail on the conditions for large traders to form short squeezes [1]. Allen et al. developed a rational expectations model that considered the expected utility gains from market corner operating. They divided participants in market corner operation into 3 types, namely the uninformed, the arbitrageurs, and the manipulator. The model they created can help to evaluate the market corner at two-time points, pre-corner and corner-period [2].

Although today's derivatives market is much better regulated than that in the 19th century, due to its huge risks, great losses of derivatives investment related to short squeezes around the world continue to occur. Yoon and Brorsen pointed out that a contemporary currency attack is a three-dimensional attack that happened simultaneously in the currency, foreign exchange, equity and financial derivatives markets and is manipulated by international speculators. The history of the Thai baht sniper war and the Hong Kong dollar defense war shows that there is nothing trivial about opening financial markets; currency attacks all start with capital inflows. Shorting is a common tactic used by capital and financial openness requires bold ideas and careful proof. Capital account opening cannot be done in isolation [3]. Further, Ke et al. used Hong Kong as a case study and examined forms of financial warfare in the securities market. It is concluded that most of the current modern financial warfare uses quantitative financial analysis to conduct information warfare and financial warfare can in turn provides a basis for early warning research. The analysis of the specific case of the 1997 Hong Kong Financial Defense War is used to examine theoretical issues such as the shape, form and style of financial warfare in the securities market [4]. Cheng et al. also reviewed the 1997 Asian Financial Crisis event. The first illustrated 'Put-Call-Futures Parity Condition', a principle of future pricing, revealed that the pricing of futures and options follow a certain relationship and clearly explained the impact of mispricing, which provides an opportunity to make a profit through arbitraging. They used Asian Financial Crisis to further illustrate the principle, especially under extreme situation situations and concluded that both the profits investors can earn and the risk during such period was perceptibly higher than normal time [5].

Similar incidents also occurred in the UK. Anatole depicted the background of the event that happened in 1990 when Britain decided to join the new monetary system established by Western European countries - the European exchange rate system (ERM), which Soros believed was a decisive mistake Britain had made. It is

precise because ERM turbulence has brought benefits to Soros, who firmly believed that Britain could not maintain the exchange rate of 1 pound to 2.95 mark, so he used \$10 billion to bet against the pound to buy the mark, bought \$500 million worth of British stocks and sold a huge amount of German stocks. His move attracted more long-term mutual funds and multinational companies. On September 16, 1992, Britain was forced to withdraw from the European exchange rate system, the pound was devalued. Soros became the biggest winner of the battle, making a profit of \$1.1 billion, while Britain paid a price of £ 3.4 billion [6]. Kaldor revealed the theoretical basis of this crisis. The exchanges rate depreciation, if expected to be stronger, will trigger the outflow of foreign exchange, the cross-border outflow of foreign exchange will lead to tight market liquidity, the real interest rate of the market will go up, in this case, the central bank will generally regulate the market liquidity by cutting interest rates or quotas to guide the real interest rate of the market down to stabilize the economy [7]. Zhao remarked the consequences of this incident in his article, and further pointed out the lessons that can learned by China, including the need to maintain the healthy development of the real economy, enhance the flexibility of the RMB exchange rate and prudently promote capital account convertibility [8].

There are even more short squeezing events on bulk commodities. Gan gives a review of the Zhuzhou Smelter incident: Hunan Zhuzhou Smelter is one of the largest lead-zinc production and export bases in China, so they held massive futures on the London Metal Exchange for hedging purposes. To prevent the decline of zinc price in future sales, it has carried out short hedging. In 1997, one of the staff members of Zhuzhou Smelter did not report present losses in time, instead, he continued to carry out overdraft trading and issued more short contracts. As its position far exceeded the established futures trading plan and was finally collectively closed by foreign financial institutions, the London zinc price increased by more than 50% in a very short time, which also led to the sharp expansion of Zhuzhou Smelter's losses. By the time the matter was exposed, Zhuzhou Smelter had issued empty order of 450000 tons of zinc, which was 1.5 times China's total output that year. He then gives investment suggestions for the Chinese Zinc Market [9]. Barclay and Hendershott remarked that the number of futures contracts required for hedging is determined by the amount of spot volume that the investor will trade in the future. Once this amount is exceeded, additional position risk is taken and the hedge becomes speculative [10]. Just a few years later, similar incidents occurred. Jing and Ye reviewed the process of the huge loss case of state reserve copper, another famous squeezing event that happened in 2003 in their article, and then summarized the past cases of similar large forced shorting events, analyzed the similarities between the various causes, and finally concluded that in the future, we should improve internal

control, strengthen supervision, strengthen systemic risk awareness, and prevent and defuse early [11].

1.3. Objective

Financial derivatives are an essential hedging tool in modern financial markets, but they also contain huge risks, and cases of huge losses in corporate derivative investments are constantly occurring worldwide. In a comprehensive view, the leverage characteristics and complexity of the derivatives market make it easy to become a tool for market manipulation, and in serious cases can threaten the financial security of the country, and in the case of insufficient regulatory capacity, the more open the development, the higher the potential systemic risk. China is promoting a higher level of openness. A high level of system opening naturally includes the further opening of the financial sector, including the opening of the capital market and derivatives market. Due to the special nature of financial derivatives, the opening of China's derivatives market should pay great attention to risks and be treated differently from the opening of general financial markets. The goal of this paper is to review the most recent short squeezing event and make recommendations for the above purpose, so as not to leave the hidden danger of long-term speculative layout for some malicious foreign financial institutions.

2. EVENT REVIEW

2.1. Company Profile

Tsingshan Group, started in the 1980s, was incorporated in June 2003 as the first major group company, Tsingshan Holding Group Co. whose headquarters address is in Wenzhou, Zhejiang Province, China. Covering various fields such as manufacturing, sales, warehousing, investment, import and export trade, it mainly produces stainless steel ingots, bars, plates, wires, seamless tubes and other products, which are widely used in petroleum, chemical, machinery, electric power, automobile, shipbuilding, food, pharmaceutical, decoration and other fields; it also produces raw materials, intermediate products and new energy batteries for new energy fields, which are mainly used in energy storage systems and electric vehicles. Ranked 279th among the world's top 500 companies, with sales of 262.6 billion yuan in 2019, stainless steel production of 10.65 million tons and 330,000 tons of nickel equivalent, it has eight production bases in five countries around the world. At this stage, it has 80,000 employees worldwide, several 100,000-ton and 50,000-ton terminals, and more than 330 related patents. In addition, Tsingshan Holding Group holds a large number of short hedging contracts to protect the value of assets on hand from future price changes.

2.2. Event Background

On March 7 and 8, 2022, LME nickel price soared from the US \$29770/ton to the US \$55000/ton, and then quickly exceed the did the US \$100000/ton. After that, LME (London Metal Exchange) suspended nickel trading and finally closed at \$80000/ton, with a cumulative increase of more than 200% in two days. The sharp rise in nickel price has attracted attention from all over the world, which greatly impacted investors participating in the futures market and the upstream and downstream of the spot industrial chain.

In fact, since the beginning of 2022, there had been an emerging upward trend in nickel price.

From early January to mid-February: both the LME nickel market and The Chinese nickel market showed a rapid upward trend. Chinese nickel broke through the upper edge of last year's wide range of shocks and showed strong demand in the off-season. There are two contributing factors: on the one hand, it was affected by related news such as the bombing of Myanmar ferronickel factory and the possible imposition of export tariffs on Indonesia ferronickel; on the other hand, worldwide low inventory status gave nickel price tremendous elasticity. Until the end of January, the news that reported the supply side of QS high matte nickel from Indonesia was shipped home cooled the nickel market and slowed down the rise of nickel price.

From the end of February to March, the conflict between Russia and Ukraine broke out. As Russia's nickel supply accounted for 8% of the world, the market was worried that the sanctions imposed by western countries on Russian commodity trade and settlement would affect the production and export of Russian nickel, which promoted a rapid rise in the nickel price again. Since March 3, the increase has gradually expanded and finally on March 7, the risk of warehouse squeeze broke out.

2.3. Event Process

The market and the exchanges behaved differently during this process, which began on March 7, when the market began to worry that the Russian nickel supply would plummet due to the escalation of Western sanctions against Russia, at which point nickel rose on the Shanghai Futures Exchange and continued to rise on the London Exchange. on March 8 the Chinese market began to rumors that a foreign long position would be forced on a domestic short position. At this time the nightly nickel price on the Shanghai Futures Exchange was halted and the nickel price closed at 228,810 RMB per ton, while the intra-day nickel price on the London Futures Exchange topped out at US\$100,000 per ton. In addition, the London Stock Exchange issued notice 22/052 to suspend trading in the nickel contract from

8.15am 8.15 am and the margin on the nickel contract would be valued by the closing price on 7 March. This was followed by Circular 22/053, which canceled all trading in nickel after 00:00 London time on 8 March and postponed delivery of the nickel contract, which was scheduled for 9 March. On 9 March, the Tsingshan Group said it had raised enough supplies for delivery. The London Stock Exchange said it would not resume trading before 11 March and on 15 March Tsingshan issued a statement that it had reached a silent agreement with a

team of futures bank creditors for Tsingshan to reduce its positions in a reasonable and orderly manner as unusual market conditions were removed. The London Futures Exchange also said on that date that it would resume trading in the nickel market on 16 March, indicating a temporary limit of 5% on nickel price fluctuations given the previous unusual volatility. It was not until the 17th of March that the London Stock Exchange announced that it would adjust nickel's up and down range to 15% from 21st March. This brought the event to an end.

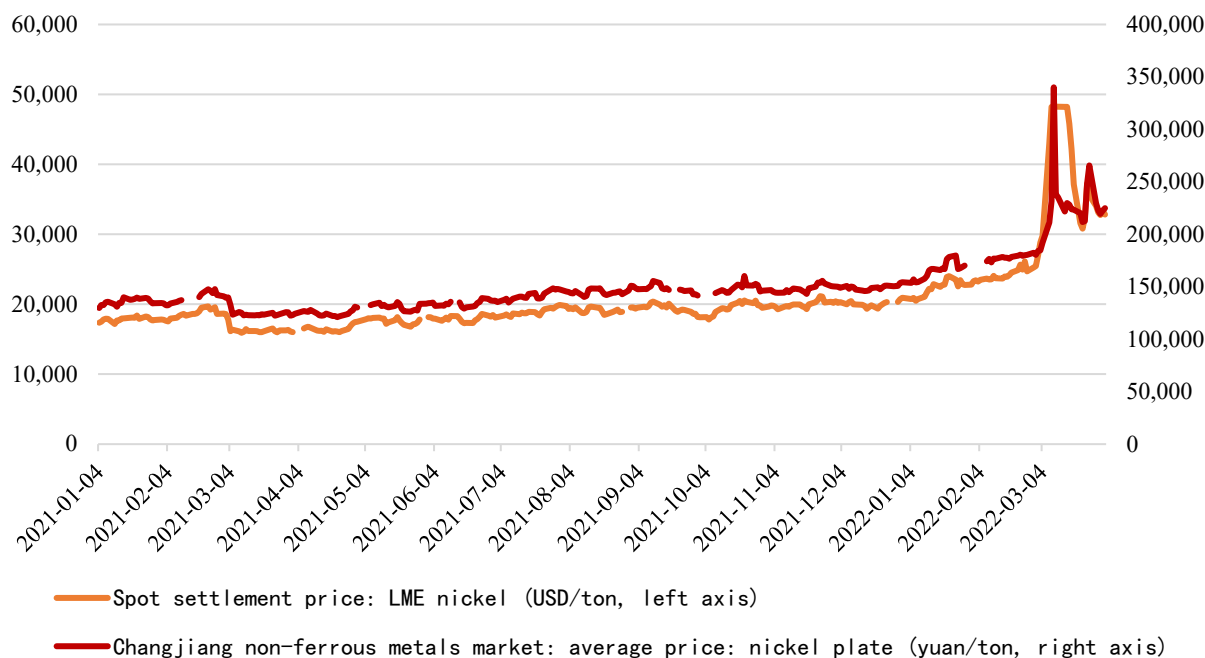


Figure 1 Spot settlement price: LME nickel

3. EVENT ANALYSIS

3.1. Analysis of The International Situation

The above article has been initially mentioned, since the beginning of 2022, nickel prices have been driven by the fundamentals and the international situation continued upward, the following analysis of the reasons behind this risk event

Since the beginning of 2022, nickel prices have broken out of the previous oscillation range and are on their way up, which is mainly supported by their strong fundamentals. For the supply side, although Indonesia ferronickel, high ice nickel projects put into production, the current output is still relatively limited, the global nickel supply continues to be tight, from the Russian nickel and Jinchuan nickel spot of a significant state of uplift can be seen in the spot market resource tension. The International Nickel Research Organization data shows that the global nickel market was oversupplied by 6,000 tons in January 2022, compared to a shortage of 5,300 tons in the same period last year. The global nickel market is expected to see a supply shortfall of 157,100

tons this year, compared to a supply surplus of 103,700 tons in 2021. The global nickel market supply and demand are expected to remain short, although a short-term surplus is emerging from the monthly balance. with the pattern of tight supply and demand increases, the global nickel inventory continues to deplete at the absolute low level, giving nickel prices up elasticity. And from the international situation, the Russian-Ukrainian conflict strengthened the nickel price upward momentum. since February, the Russian-Ukrainian conflict continues to escalate, and at the end of February, the outbreak of the Russian-Ukrainian war, triggering triggered the West on Russia to carry out multiple rounds of sanctions. The energy crisis in Europe has intensified, and Russia has also opened financial countermeasures, spreading global financial risks. As Russia is a major producer of nickel, Russian nickel supply accounts for 8% of the world, which is mostly used for export. As a result, since the end of February, market concerns about the shrinking global nickel supply have continued to fester, reinforcing its fundamental support in terms of expectations and stimulating market sentiment, which in

turn has brought about an accelerated rise in nickel prices.

3.2. China Situation Analysis

In terms of China's domestic situation, the Financial Committee of the Chinese State Council held a special meeting after the incident, which stressed the need to actively introduce market-friendly policies and cautiously introduce contractionary policies. It was stressed that the economy should be effectively revived in the first quarter and that monetary policy should be proactive in response. Overall, the short-term impact of the Russia-Ukraine conflict is gradually being digested by the market and risk aversion has receded, but in the long term, the global energy mix is likely to undergo significant changes, compounded by its supply chain problems, and global inflationary risks continue to spread. And from the economic fundamentals, high inflation is gradually eroding residential consumption as well as corporate investment and is expected to further increase the likelihood of global stagflation later.

3.3. Reason Analysis

3.3.1. Direct Causes

The direct cause of the incident is that the extremely low level of the inventory of nickel triggered the capital game. early March, the inventory of nickel fell to more than 70,000 tons, a year-on-year decline of 70%, overlaid with the Russian-Ukrainian conflict or brought about by the sudden reduction in the supply of Russian nickel, the problem of insufficient delivery goods appeared, the risk of squeeze position significantly increased, and ultimately triggered the capital between the capital game.

3.3.2. Indirect Reasons

In addition to the above reasons, the characteristics of the nickel product itself also indirectly contributed to the development of the event. The nickel industry chain is diversified, while the delivery item is single and there are more non-fully hedged phenomena. From the perspective of the industrial pattern of nickel, in recent years, the proportion of electrolytic nickel has gradually decreased, the production of ferronickel and high ice nickel has increased, and their prices are highly correlated with nickel prices, so the risk management needs of this part of the production enterprises have been increasing, and the proportion of hedging of non-standard products has increased. However, as the LME's nickel delivery product is electrolytic nickel (containing no less than 99.8% nickel), the short futures of non-standard product producers such as ferronickel and high-ice nickel cannot constitute a full hedge with the products they produce, triggering the risk of physical delivery.

4. SUGGESTIONS FOR HEDGING AND BULK PRODUCT TRADING

4.1. Event Outcome and Reflection

Although the Tsingshan nickel event has gradually subsided, the great impact on the upstream and downstream of the nickel industrial chain cannot be ignored. The abnormal rise of nickel price leads to the failure of the guiding role of the futures market on the spot market. In particular, under the suppression of high prices, the cost risk of downstream enterprises greatly increased, which made relevant markets almost stagnate. Tsingshan's problem is the unfulfilled risk control, they failed to expect and respond in time to the drastic changes in the Nickel market. Another problem is the exposure to positions. As early as January, it was widely rumored that had a large number of short positions, indicating a big attack opportunity for speculators. To avoid a similar situation, all parties in the market should take this as a lesson and make risk prevention in advance.

4.2. Enterprise Risk Control

From the perspective of manufacturing enterprises, first, a careful judgment for formulating hedging schemes is needed and they need to make complete risk plans. The provisions on the amount number of hedging positions need to be combined with the actual production and operation of indenter Proserpine to avoid speculative exposure caused by unreasonable hedging proportion, like the "Zhuzhou smelter event". In this event, the Tsingshan group hedged the position of the whole year at one time based on its judgment of the weakening of the overall fundamentals of nickel in the future, resulting in excessive contract positions and excessive liquidity risk near the delivery month. Reasonable treatment should be that hedging positions should correspond to enterprises' current production and operation or correspond to the medium and short-term (such as a quarter) commodity production quantity so that the risk is relatively controllable. Further, for enterprises participating in hedging, a risk plan should be facilitated, they need to beware of the delivery risk towards non-standard products, the problem of insufficient physical delivery as well as the fast response in case the risk event occurs; Second, domestic enterprises should be careful when entering into futures position in overseas markets. Confidentiality measures for their position, inventory and other key business information should be taken if they decide to participate. At the same time, enterprises should timely enhance the ability to collect and process all kinds of information, especially the information related to counterparties, spot resources, warehouse receipt inventory and so on, to avoid being targeted by counterparties for reasons such as lack of overseas market information or future trading rules. Third, domestic enterprises need to establish a solid and

effective internal control system when participating in hedging operations, such as supervision regarding illegal operations and the disconnection between futures operations and spot procurement.

4.3. Market Supervision

From the perspective of regulators, no doubt the freedom and openness of market transactions are important, however, the exchange, as an important market participant, should play a regulatory role. Some deficiencies in the risk prevention system of overseas exchanges were exposed in the Tsingshan nickel event, such as the lack of a complete trading limit system, position limit system, large household reporting system and contingency measures for continuous trading limit varieties. In the future, participants in derivative markets should study the impact of such an emergency time and make sophisticated risk plans for foreseeable risks in time, such as setting stop-loss limits.

5. CONCLUSION

This paper analyses and evaluates the risks of hedging by large companies using commodities based on the nickel trading event of Tsingshan Holding Group on March 8. The analysis is also used to propose corresponding countermeasures. An abnormal rise in commodities can lead to a failure of the guidance of the futures market on the spot market. In particular, the cost risk for downstream companies is greatly increased under the suppression of high prices, bringing the relevant market to a near standstill. As well as premature or unreasonable exposure of a company's position may lead to attacks on the company from competing companies or foreign capital. From a producer's perspective, the first step is to make a careful judgment about developing a hedging system, which requires a complete risk plan as well as an adequate response plan. From the regulator's perspective, the exchange, as an important market participant, should play a regulatory role and have plans and drills to deal with market contingencies and prepare for emergencies.

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