Problems and Suggestions of Polypropylene Futures Market in China

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Abstract. Since its successful launch in 2014 on the Dalian Commodity Exchange (DCE), the polypropylene futures market has been operating steadily for ten years. Over the past decade, polypropylene futures have maintained stable operation, gradually exerted their functions and increased market recognition and participation, effectively meeting the needs of relevant industry enterprises to cope with price risks and successfully achieving high-quality development. However, there are still many unresolved issues, one of which is the most prominent problem caused by the weak liquidity of the polypropylene futures market to market participants. This paper will review the polypropylene spot market from two aspects: the size of the polypropylene spot market and the trading volume of the futures market. This paper highlights the existing issues of weak liquidity, small market size, and limited market participation in the polypropylene futures market. It puts forward corresponding countermeasures to address these challenges. The study contributes to the healthy and sustainable development of the polypropylene futures market.

Keywords: Polypropylene, futures, China.

1. Introduction

With the large-scale production of coal to olefins, propane dehydrogenation and other technological routes in recent years, as well as the development of the economy and society, China has become the world's largest producer and consumer of polypropylene. In 2023, the production capacity is nearly 40 million tons, the production capacity is about 30 million tons, and the consumption is about 35 million tons. In the future, the production capacity of polypropylene will further expand. The increasingly fierce competitive landscape and complex market environment have also increased the importance of risk management. In order to better meet the hedging needs of the industry, PP futures were successfully listed on the Dalian Commodity Exchange in 2014. Compared to a series of resin futures, polypropylene (PP) futures were listed later. However, after ten years of trading on the Dalian Commodity Exchange, the market became increasingly mature, and the design and trading system of futures contracts gradually improved. With the development of the market, more and more enterprises are beginning to explore the use of futures, options and other tools for risk management. There are successful cases and mature models for upstream lock in sales prices, midstream basis trade, and downstream lock in raw material prices. With the continuous participation of participants in various stages of the industrial chain, polypropylene futures have also achieved a series of fruitful results with the support and participation of all parties in the market. The trading volume and position have continued to grow and have firmly ranked among the top of similar domestic varieties. The formed polypropylene futures prices can accurately reflect the future supply and demand trends of the market, gradually becoming a powerful "assistant" and "stabilizer" for industry hedging and pricing.

According to statistics, since polypropylene futures listing in 2014, the turnover and position of polypropylene futures have increased year by year, and the average daily turnover has increased from 118600 to 555000 in 2023, an increase of 368%; The average daily position increased from 106400 to 787600, an increase of 640.23% (See Fig. 1) [1]. While the market scale and risk carrying capacity have been continuously improved, the participation of industrial customers has also been significantly improved. By the end of 2023, the proportion of customers' positions in the polypropylene futures industry has reached 34%. However, due to the characteristics of polypropylene spot market and the relatively late listing of polypropylene as a futures variety in China's futures market, there are still many problems in the polypropylene futures market. Due to its late listing and low degree of opening to the outside world, polypropylene futures' market size, market depth (trading volume and frequency) and diversity of market participants are still largely inferior to crude oil and other futures compared with other commodity futures, even after years of continuous development.

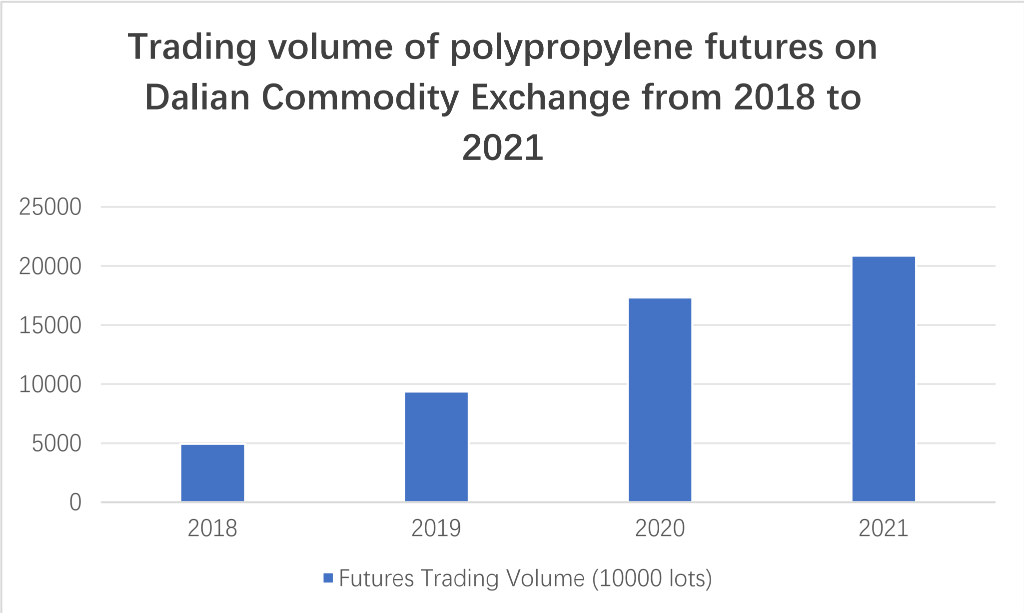

Fig. 1 Trading Volume

2. Problem

2.1. Liquidity

The liquidity of futures market is the key index to investigate the maturity and operation efficiency of futures market. As the cornerstone of financial market operation, liquidity is an important factor to promote the formation of futures price and the realization of market function [2].From the perspective of the relationship between futures and spot markets, previous studies have considered that the price discovery function is the key factor affecting the liquidity of futures markets, and the liquidity of futures markets is the antecedent variable to realize the hedging function of futures markets [3]. It can be seen that market liquidity plays an intermediary role between the hedging function of futures markets and the price discovery function. Therefore, for the realization of the function of a variety of futures market, the importance of market liquidity is self-evident. In today's polypropylene futures market, the slightly poor liquidity has become an urgent problem to be solved. The problem of poor liquidity is caused by many factors. Political, economic and market dynamics and other factors will have an important impact on the liquidity of futures. Political events may lead to increased market volatility, thus affecting liquidity. For example, the price fluctuation of crude oil, an important raw material for polypropylene, caused by the Russian Ukrainian war, was transmitted from the crude oil market to the polypropylene futures market. What is more, after the release of economic data such as GDP and CPI, it may cause changes in market sentiment, which will affect trading volume and bid ask spread. In addition, due to the seasonal factors of polypropylene itself, "golden nine silver ten" has always existed in the polypropylene futures market, making the liquidity of the polypropylene futures market stronger in September and October. However, due to the changes in the supply-demand relationship in the polypropylene spot market in recent years, the market fluctuated significantly, resulting in no obvious increase as in previous years even in September and October, which also led to the decline of some market participants' confidence in the market and even withdrawal from the market.

2.2. Size

Relatively speaking, the futures varieties with low activity, small market scale and low degree of marketization have weak guidance of futures prices to spot prices and low efficiency of price discovery [4]. Due to the late formation of polypropylene futures market, its market size is slightly smaller than that of other mature markets, which cannot better meet the needs of market participants for the price discovery function and risk management function of futures market and cannot more effectively discover the market price and realize the price discovery function. A large-scale market often means a large number of market participants, which makes the market have a wider range of information and views. At the same time, it will attract a large amount of information into the market, which will help to form a more accurate and more referential price, which will help the Pricing Reference of the spot market, improve market efficiency, and promote the market price closer to the reasonable value level. In addition, a larger market can provide more trading options and tools to meet the risk management needs of different market participants. Manufacturers and traders can use the futures market to hedge the risk of price fluctuations, and investors can carry out speculation and arbitrage operations through the futures market to achieve risk diversification and capital preservation. The increase of market size means more counterparties and more trading opportunities, which is conducive to market participants to manage and avoid risks more effectively, improve the overall risk resistance of the market, and realize the function of futures market risk management. The size of the futures market of a variety is often closely related to the size of the spot market. From the perspective of historical development, virtual economy is the product of the development of real economy. Such as money, stocks, bonds and other original financial instruments represent the control and ownership of physical assets and are the carrier of virtual economy. In order to meet the needs of real lending and investment and financing, the real economy development determines the expansion range of virtual assets [5]. For example, polypropylene is an important raw material widely used in plastic products, textiles, medical devices and other fields, and the market demand directly affects the market scale. With the development of these industries and the growth of demand, the scale of polypropylene market may expand, which will drive the expansion of futures market. Therefore, macroeconomic development and changes in consumer preferences will have an impact on the size of the polypropylene market. In addition, the competition pattern in the market will also have an impact on the market scale. If there are many highly competitive manufacturers and dealers in the market, the market scale may be larger. A highly competitive market helps to increase market activity and liquidity, thereby expanding market size.

2.3. Participants

The number and diversity of market participants have an important impact on the realization of futures market functions. The participant structure of polypropylene futures market is one of the important factors affecting the realization of futures market functions. Different types of participants play different roles in the market. Their behavior and trading activities directly affect the effective realization of market liquidity, price discovery and risk management functions. Among them, the participation of institutional investors has become an important symbol of whether the market is mature or not [6]. Compared with the mature variety market, today's polypropylene futures market has a single market participant, imperfect structure, weak product innovation ability and slow development of financial futures varieties, which also leads to fewer professional institutional investors and more retail investors lacking professional knowledge. On the other hand, the number of futures companies is not only small, but also the overall level is low. The source of income is mainly engaged in brokerage business, the trading target is mainly speculative spread income, and the innovative income such as risk management is insufficient [7]. In addition, market participants also include manufacturers, traders, investors, arbitrageurs, etc. different types of market participants have different trading needs and strategies, which will promote the diversity of transactions in the market. For example, manufacturers may use the futures market to hedge the risk of raw material price fluctuations, while investors may conduct speculative transactions through the futures market.

Therefore, the rational allocation of various types of participants in the polypropylene futures market is very important. Different types of participants interact to jointly promote the effective realization of market functions. A diversified and healthy participant structure is conducive to improving the liquidity, price discovery and risk management functions of the futures market, thus promoting the steady development of the market.

3. Solution

3.1. Improve the Eecosystem of the Futures Market

The key to increase the market scale of polypropylene futures market is to establish a more perfect futures market ecosystem. Futures varieties are important hedging tools. 94% of the global top 500 enterprises hedge in futures and financial derivatives markets to manage risks. Therefore, only a perfect futures variety system can meet the needs of hedgers. Futures varieties should be closely related to the real economy and really play a role in serving the real economy [8].

Consider introducing more polypropylene related futures, such as polypropylene futures contracts of different specifications and quality, to meet the needs of different investors. Diversified product varieties will attract more participants to enter the market and promote the expansion of market scale. It is suggested to strengthen market promotion and publicity [9], improve the popularity and exposure of polypropylene futures market, and attract more investors and traders to participate. At the same time, cooperate with polypropylene production enterprises, processing enterprises or end users to jointly carry out market promotion activities by holding industry seminars, issuing market reports, and carrying out education and training, so as to improve the popularity and awareness of the futures market. Through joint promotion, introduce the characteristics, trading opportunities and risk management tools of polypropylene futures market to investors to increase the attractiveness of the market. In addition, cooperate with upstream and downstream enterprises in the polypropylene industry chain to promote the practical application and trading of futures contracts and expand the market scale. With the futures market as the link, promote the cooperation and interaction between upstream and downstream enterprises in the polypropylene industry chain. Through the futures market, enterprises in different links can better coordinate production plans, control risks, and enhance the competitiveness of the entire industrial chain. The futures market can better integrate with actual economic activities, attract more enterprises and investors to participate in trading, so as to expand the market scale and establish a more perfect futures market ecosystem.

3.2. Innovation of Futures Market Related Tools

It is suggested to provide more trading opportunities and hedging tools to increase market depth. For example, adding contracts with different delivery dates provides more options for futures contracts. By introducing polypropylene futures contracts with multiple delivery months, investors can more flexibly choose contracts suitable for their trading strategies, and also promote the market to be more active throughout the year. At the same time, promote intertemporal arbitrage transactions, encourage and support intertemporal arbitrage transactions, and attract more investors to participate in such transactions and increase market liquidity by providing incentives, such as reducing the margin requirements of intertemporal arbitrage transactions and providing additional incentives. In addition, efforts should be made to develop the relevant derivatives market, promote the polypropylene futures related derivatives market, such as futures option portfolio and cross species arbitrage, increase the complexity and diversity of the market, and further promote the integration and innovation of financial instruments. For example, the policy pledge of price insurance with high guaranteed level has a strong attraction for financial institutions, which can strengthen the cooperation with financial institutions such as banks and form the mode innovation of "financing+guarantee+insurance+futures" [10]. At the same time, Optimize the trading system and settlement mechanism, improve trading efficiency and settlement speed, improve the depth and liquidity of market transactions, reduce transaction costs, and further attract more dealers and institutions to participate in the market by providing more competitive quotations and broader market coverage. Through the support of some preferential policies, more market liquidity providers such as market makers and liquidity suppliers are encouraged to enter the market. Strengthen the linkage and interaction between polypropylene futures market and spot market and improve the overall efficiency and liquidity of the market. Establish a stable and efficient linkage mechanism between the spot and futures markets, promote the effective use of market price discovery and risk management tools, and enhance market liquidity and price stability.

3.3. Lowering Market Entry Barriers

Lowering the threshold of market access is crucial to attracting more participants. Simplify the account opening process, provide online account opening services, reduce cumbersome documents and procedures, formulate differentiated fee policies, reduce transaction costs, and carry out market education and training activities for investors to improve investors' understanding and understanding of the polypropylene futures market and enhance their confidence and ability to participate in the market. Especially for beginners and small investors, this can improve their enthusiasm to participate in the market and attract more individual investors to participate in the market. Actively expand the group of market participants including institutional investors, individual investors, hedgers and speculators. And through targeted market promotion and publicity activities, cooperate with futures brokers, financial institutions, industry associations, etc., to jointly promote the publicity and promotion of polypropylene futures market, expand market influence and popularity, attract more investors to participate in the market, and increase the number of market participants. It is also necessary to create a more attractive investment environment. Introduce innovative financial instruments and products, such as options and ETFs, to meet the needs of different investors. Encourage market innovation and promote the listing of more new products to expand the breadth and depth of the market. Establish a stable, transparent and fair market supervision system to enhance the confidence of investors and make them more willing to participate in the market.

4. Conclusion

Under the background of the tenth anniversary of the opening of polypropylene futures market, this paper shows the development of polypropylene futures and spot market in the past decade, and puts forward some existing problems and corresponding countermeasures. The relatively short time of market development has brought many problems, such as market liquidity, market size and participants. The effective solution of these problems requires the joint efforts of the whole society. Only the government, futures exchanges and a series of participants in the industrial chain work together can the futures market achieve healthy development.

However, due to the late appearance of polypropylene futures varieties compared with other varieties and the lack of relevant data and research, it is difficult to obtain sufficient reference value of information and data to demonstrate, which is one of the defects of this study.

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