

# Research on the Influence of the Combination of Blockchain and Supply Chain Finance on Small, Medium and Micro Enterprises

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**Abstract:** As the most popular cutting-edge technology in the past two years, blockchain is essentially a multi-center, tamper-proof data structure and accounting method. At the moment of the epidemic, small, medium and micro-sized enterprises have difficulty in financing and weak ability to resist risks, which can easily lead to bankruptcy. The difficulty of financing for msme and the mutual trust between financial institutions are the core pain points of supply chain finance. The block chain has the characteristics of data traceability and non-tampering, which is the key to solving the pain points of supply chain finance and saving msme, and opens up a new market space in the supply chain finance industry.

## 1. The introduction

In October 2019, during eighteen collective study sessions at the Politburo, General Secretary Xi Jinping stressed that "we should use blockchains to solve the problems of small and medium-sized enterprises' loan financing, bank risk control and sector supervision", the government-driven blockchain applies supply chain finance to meet the financing needs of msme. Supply chain finance is based on the core enterprise, focusing on the financing demands of msme in the upstream and downstream of the core enterprise, helping msme to continue to operate through the effective docking of capital and assets. However, the traditional supply chain finance business model is limited to solve the financing problem of msme. By fusing block chain technology, this core pain point can be solved.

## 2. The pain point of small and medium-sized enterprises in supply chain finance

One of the core pain points of traditional supply chain finance is the mutual trust between financial institutions and enterprises. Paper warehouse receipts and bills are easy to be forged, and there will be corresponding business risks and financial risks. Secondly, the inter-enterprise systems are not interoperable, and trade information is mainly transmitted by paper documents, which makes it difficult to unify capital flow, information flow, logistics and business flow, thus making it difficult for msme to borrow money, Banks to control risks and relevant departments to supervise. In addition, the inability of core enterprise credit to be transferred across levels is also an important reason for the difficulty of financing for small, medium and micro enterprises [1]. Core enterprise credit can only be transferred to primary enterprises, while secondary and above enterprises cannot achieve supply chain financing through core enterprise credit.

According to the Ministry of Industry and Information Technology, the number of micro, small and medium-sized enterprises in China has reached more than 30 million, accounting for more than 90 percent of the total number of enterprises, contributing more than 50 percent of the country's tax revenue, more than 60 percent of the country's GDP, more than 70 percent of the achievements of technological innovation and more than 80 percent of the employment of the workforce. Small and medium-sized enterprises can be said to support half of the Chinese economy. However, the problem of msme loans is particularly serious, the small and medium enterprises lack of a sound

management mechanism, financial statements are not standardized, it is difficult for banks to provide information through their own effective risk control. In addition, under the supply chain finance model, the credit of the core enterprise can only be transmitted to the first-class supplier, and the multi-class supplier can not use the credit of the core enterprise to carry on the loan financing, but still can not solve this problem. The more small enterprises, the stronger the loan demand, the higher the corresponding repayment risk, the more difficult the bank loans, leading to supply conflicts, which is also the pain point of supply chain finance.

### **3. Supply chain finance under the technology convergence of blockchain**

As a trusted decentralized data book, blockchain has the technical characteristics of untamper-able and traceable historical data, which is very suitable for increasing the mutual trust of participants in multi-participation scenarios. In particular, the Alliance blockchain has an access mechanism, which is generally initiated by the alliance of institutions, enterprises and government organizations in the industry, and set up the alliance chain in the alliance to complete the synchronization of accounts and the settlement of transactions, also known as the "inter-enterprise database". It has the characteristics of being friendly to supervision and meeting the needs of painful points within market groups. It introduces the technology of blockchain into supply chain finance, realizes the storage and up-link of data and information, and further strengthens the security, non-tamper and trace ability of information, finally achieve the mutual trust between the enterprises and institutions involved in the supply chain finance. Compared with the traditional supply chain finance, its advantages are: to maximize the four-stream integration; to improve the financing efficiency; to solve other financing problems of msme; to reduce the default problem. The integration of blockchain and supply chain finance is the key to solve the financing and loan difficulties of msme in supply chain finance.

### **4. The data is reliable and more efficient**

Through the integration of blockchain technology and supply chain finance, the capital flow, information flow, logistics and business flow can be maximized. The difficulty of block chain tamper makes the data credible, and reduces the difficulty of enterprise financing and bank risk control [2]. On-line operation, wind control data acquisition, contract signing, Bill Circulation and other business implementation on-line. Four-stream data, financing data and various data operation records are stored in the chain, trade and circulation are carried out in the chain, further shorten the cycle, improve efficiency. This will lay a foundation of trust for solving the financing difficulties of msme and other problems.

### **5. To solve the financing difficulties of small and medium-sized micro enterprises**

Blockchain technology can achieve the credit penetration of the supply chain financial system and solve the problems of financing difficulty and high financing for the secondary supplier distributors. Blockchain plays two roles in supply chain finance: First, it is the process of confirming the right of the core enterprise, including the check and confirmation of the real validity of the whole bill; Second, it is the proof of the real validity of the circulation of the credit certificate, guarantee that the creditor's rights certificate itself can not be forged, so as to achieve a breakthrough in credit, and then solve the credit financing problem of secondary suppliers [3]. In this ecology of trust, the core enterprise's credit, that is, bills, credit lines or accounts payable right, can be converted into digital warrants. Through the intelligent contract to prevent the risk of performance, so that credit can be effectively transmitted along the supply chain, and then reduce the cost of cooperation, improve performance efficiency. More importantly, when the digital warrants can be anchored on the blockchain, the smart contracts can also split and circulate the funds of upstream and downstream enterprises, greatly increasing the rotation speed of the funds, the problem of financing difficulty and loan difficulty for Small and medium-sized micro-enterprises was solved.

## 6. Increase in market size and penetration

From the above analysis, it can be seen that the integration of blockchain and supply chain finance has greatly reduced the threshold of enterprise loans, resulting in the multi-level credit transfer of core enterprises, the enhancement of the ability to monitor goods and the pricing ability of credit risks, market Penetration in supply chain finance. Combined with blockchain technology, 2023 expects to have 48.3% of Market penetration, according to Iresearch, with figures and trends shown in figure 1.

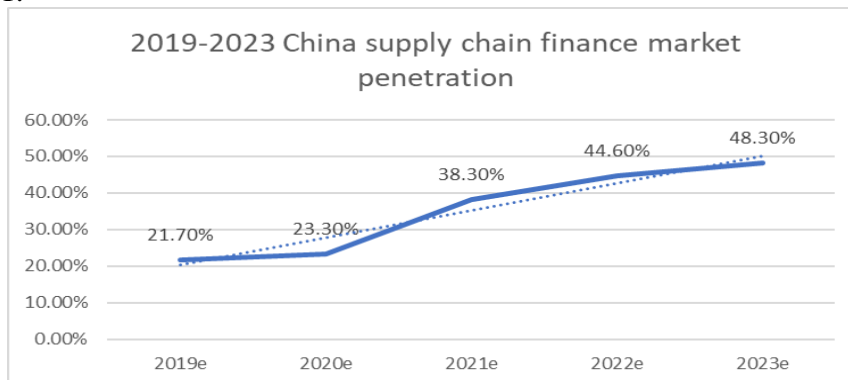


Figure 1. 2019-2023 China supply chain finance market penetration

(Source: market research, industry interviews, Iresearch statistical model accounting)

In terms of the increase in market size, iresearch predicts that with the participation of blockchain, the size of the 2023 financial market is expected to grow to 6.1 trillion yuan, which is 3.6 trillion yuan larger than the traditional supply chain financial market, year-on-year growth has increased significantly. As figure 2 shows:

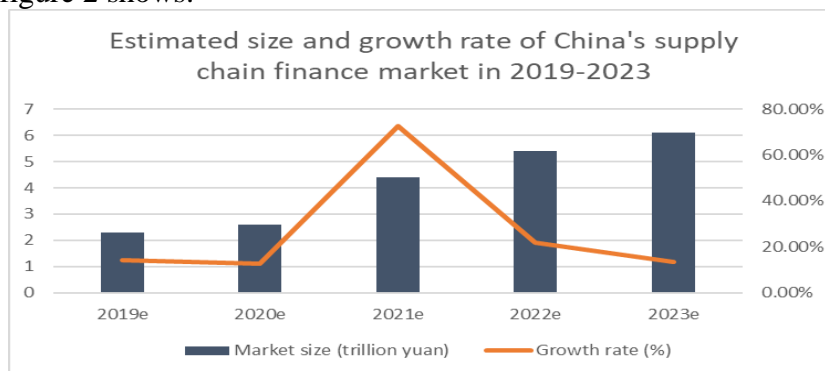


Figure2.Estimated size and growth rate of China's supply chain finance market in 2019-2023

(Source: market research, industry interviews, Iresearch statistical model accounting)

## 7. Conclusion

The integration of Blockchain, to a certain extent, solves the problem of financing difficulty and loan difficulty of small and medium-sized enterprises in supply chain finance, and further increases the market scale. Establishing alliances between core firms and banks to serve all upstream, midstream and downstream firms in the supply chain, and issuing digital passes along the chain to reflect real-world paper, these passes are moved and split according to the different needs of the transaction [4]. Because the blockchain has the characteristics of being untamper-able, open and transparent, and traceable, the authenticity and credibility of the data information of each transaction can be traced on the chain, which greatly reduces the cost of wind control, avoid the need for the core enterprise for the credit endorsement, thus better solve the problem of small business loans. With the support of government and the support of technology, msme will be better able to cope

with all kinds of risks and acquire the ability of sustainable operation in the context of the combination of blockchain and supply chain finance.

## References

- [1] Liu Jun. Research on the application of supply chain finance based on block chain technology —— A case study of Smart Warrant Finance. [J]. Business News. 2020, (03), 5-7.
- [2] Gao Xiaochun. Bu Yanhua. Discussion on constructing financial service platform of supply chain based on blockchain. [J]. Financial Crisscross. 2019, (12), 27-31.
- [3] Lin Nan. On Innovation of Supply Chain Finance Model Based on Block Chain Technology. [J]. New Finance. 2019, (04), 51-55.
- [4] Zhu Xingxiong. He Qingsu. Guo Shanqi. On the Role of Blockchain Technology in Supply Chain Finance. [J]. China Business and Market. 2018, (03), 111-119.