An Analysis of Supply Chain Finance and Small and Medium-Sized Enterprises Financing Pressure Relief

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Abstract: Small- and medium-sized businesses are crucial to the health and stability of the economy. However, SMEs typically struggle to find funding on the market. This study analyzes the reasons of small- and medium-sized businesses' financial pressures, introduces three main models of supply chain finance, corresponds the advantages of supply chain finance to the problems of SME financing and puts forward the suggestion of relieving the financing pressure of SMEs through the application of supply chain finance in hope that this article can provide reference direction for the development and reform of SMEs and reduce their difficulty in financing.

1 INTRODUCTION

Small and medium-sized enterprises are at disadvantage of defending against risks. After the attack of Covid-19, most SMEs are heavily hurt because of the accumulation of inventory and failure to gain finances from financial institutions. Although government's support can temporarily relieve their pressure, the fundamental way should take market law and other market entities into consideration.

The competitiveness in the supply chain is undoubtedly crucial to how competitive modern businesses are. A stable and efficient supply chain can effectively reduce the risks and costs of enterprises and improve production efficiency. At present, upstream and downstream SMEs in the supply chain are facing the problems of high capital turnover pressure and financing difficulties, which may easily cause SMEs to lose capital and interrupt the production of the whole supply chain. Supply chain finance unifies various roles in the supply chain, which works and communicates to a limited degree in traditional financing modes, expands new forms of financing in addition to the conventional financial model, uses the supply chain's more developed information and logistical flow to address the weak capital flow, and promotes finding a solution for SMEs' financing issues.

Under the current context of information technology being more and more common in the process of company operation, although SCF is gradually known and taken by many enterprises, there are still some barriers in the way of using SCF to solve SMEs' difficulties. Technologies such as big data, algorithms, artificial intelligence, blockchain and Internet of Things truly incorporate SMEs into the system of supply chain finance, which can turn previously unusable data on business behaviour into standardised, quantifiable and usable credit data, solving the problem that the traditional credit granting model relies excessively on the credit status of individual enterprises and collateral guarantees (Wang 2022). However, the most urgent problem is that most SMEs have not digitized fully, which needs both time, money, labour and resource input. SCF in SMEs exists moral fraud risk, operational risk and credit risks. And there is no authoritative and unified standards for evaluating SMEs' credit risks and for regulating SCF.

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2 ANALYSIS OF FINANCING PROBLEMS OF SMEs

In the process of financing, SMEs will encounter various obstacles due to their small scale of operation, lack of credit records and few fixed assets, mainly because of their few financing channels and the transfer of capital pressure from core enterprises.

2.1 Few Financing Channels

Enterprises have a variety of financing channels that are available from the aspect of literacy, including endogenous financing such as equity capital, retained earnings and depreciation, and exogenous financing including marketable securities, like stocks and bonds, as well as bank loans and commercial credit financing (Zhang 2006). Exogenous funding, in which SMEs are only able to obtain limited liquidity funds, is more challenging to get than endogenous financing, which is the primary financing strategy utilized by SMEs. The main reasons for the difficulty of exogenous financing for SMEs are as follows.

2.1.1 Immaturity of the Capital Market

Most SMEs do not have the conditions to issue stocks and bonds, and SME stock financing only accounts for about 1% of their total domestic financing (Zhang 2006). Even if the conditions for issuing stocks and bonds are met, SMEs do not have an advantage in the capital market. Due to their relatively small size of companies, lack of social visibility, lack of transparency of financial information, low credit history and high investment risks, the market value of SMEs' stocks and bonds is low, making it difficult for enterprises to quickly obtain the funds they need through stocks and bonds. SMEs have a high demand for liquidity and more short-term funds mainly for production and operational turnover. The speed of access to funds as well as the cost of access to funds is important factors in the financing, while the current capital market in China still has a lot of room for improvement, making it difficult for SMEs' financing needs to be met quickly and at a low cost.

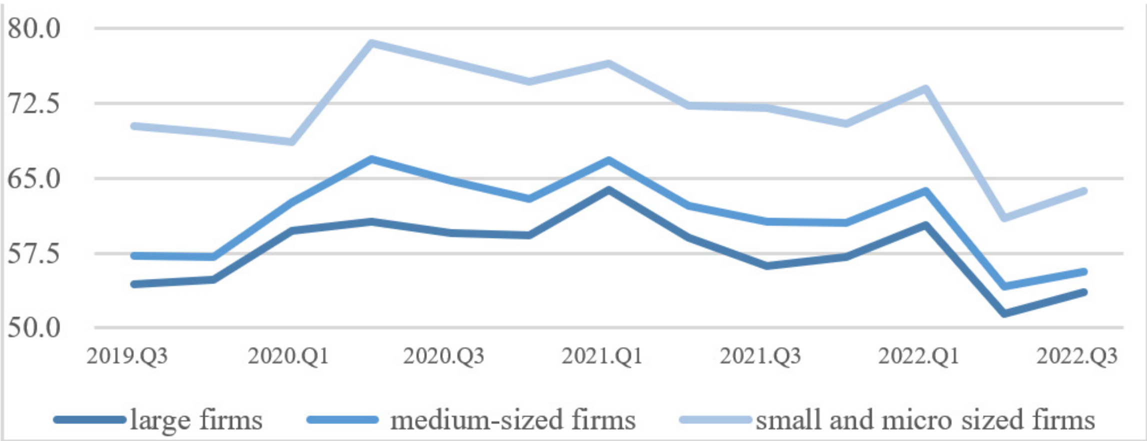
2.1.2 Hard to Get Bank Loans

Information asymmetry refers to the phenomenon that information is unevenly distributed among the corresponding economic individuals, and the more information a transaction subject has, the more advantageous it is in the transaction. Due to the fact that the phenomenon of information asymmetry exists widely, banks have less information about the profitability and collateral of SMEs and are in a disadvantageous position in the transaction. The high uncertainty of banks in providing loans to SMEs leads to the problem of high cost, and high credit risk (Fan, Su, and Wang 2017).

For banks, providing loan services requires company reviews and credit record enquiries, a process that entails time costs and manpower costs. Information on financial statements and corporate governance structure of large enterprises is more accurate and transparent and easily accessible, and there are mature market mechanisms and clear credit rating criteria for loans to large enterprises. Investigating large enterprises is more time-efficient and labour-efficient than investigating SMEs, and lending to large enterprises is less risky because of more financial information and high transparency of operation situation, and the larger the loan amount, the more interest the bank can get, so banks are more inclined to lend to large customers with lower transaction risks rather than The banks are therefore more inclined to lend to large customers with lower transaction risk than to SMEs with low information transparency, the inaccurate credit assessment, small loan amount and high default risk (Li 2012).

Bank loans also require collateral and guarantees. Bank loans are more inclined to fixed assets as collateral, such as land, real estate, machinery and equipment, etc. SMEs have fewer fixed assets and more liquid assets. Due to their scale and short operating time, SMEs' assets are mainly liquid assets such as inventory goods, materials in transit, raw materials, etc. It is inconvenient for banks to control liquid assets and more difficult to supervise them (Song 2019), thus requiring a guarantee from a third party when applying for a loan from a bank. The development of China's guarantee mechanism is not yet perfect, and there are fewer institutions providing guarantees for SMEs. The People's Bank of China survey shows that the financing needs index of SMEs is higher than the financing needs index of large enterprises. This reflects the urgency of SMEs' financing needs and development potential.

Table 1: The comparison of the loan demand index.



2.2 Transfer of Capital Pressure from Core Enterprises

The transfer of capital pressure is mainly in the form of transfer of pressure from core enterprises to upstream and downstream SMEs. There is usually a core enterprise in the supply chain, and the core enterprise is usually larger. The core enterprise usually occupies a dominant position in the whole supply chain and is the key linkage of production, sales and transportation in the supply chain, and is the information exchange centre and the "dispatch centre" of logistics distribution in the supply chain (Yu 2011). To maximize their interests, core enterprises often use delayed payment or advance payment to delay capital outflow and increase capital inflow, but in this case SMEs lack capital inflow.

In the case of upstream SMEs, the core companies use the credit sales model to reduce their financial pressure by delaying payment or paying in instalments. With credit sales, upstream sellers are unable to obtain payment for their orders as soon as they arrive, but companies need working capital to run their operations, so the financial pressure is transferred to the upstream companies. Credit sales only transfer the risk from the downstream enterprises of the supply chain to the upstream enterprises, which cannot fundamentally solve the problem of shortage of capital flow in the supply chain, but on the contrary, it will endanger the stability and fluidity of capitals in supply chain and make financing cost of the supply chain become more expensive and bring risks to the sustainable operation of the supply chain. For downstream SMEs, due to the lack of voice, downstream enterprises need to pay the core enterprises in advance to obtain the corresponding raw materials, semi-finished products, finished products and other ordered materials. In addition to prepayment to core enterprises, downstream enterprises also need to pay for the operation, transportation and sales costs.

3 THREE MAIN MODES OF SUPPLY CHAIN FINANCE

At different stages of the supply chain, the financing models adopted by SMEs can be divided into accounts payable model, accounts receivable model, confirming warehouse and financing warehouse models

3.1 Accounts Payable Model

In the procurement stage, SMEs mainly use the accounts payable model for financing. SMEs need to apply for financing from banks when they are under financial pressure in the procurement process. By assessing the risks of core enterprises, third-party logistics enterprises supervise and evaluate the goods and provide guarantees for SMEs, banks advance the payments to core enterprises, and SMEs can get the goods by forming accounts payable to banks and repay the banks after the return of funds. Fig 1 shows the accounts payable model.

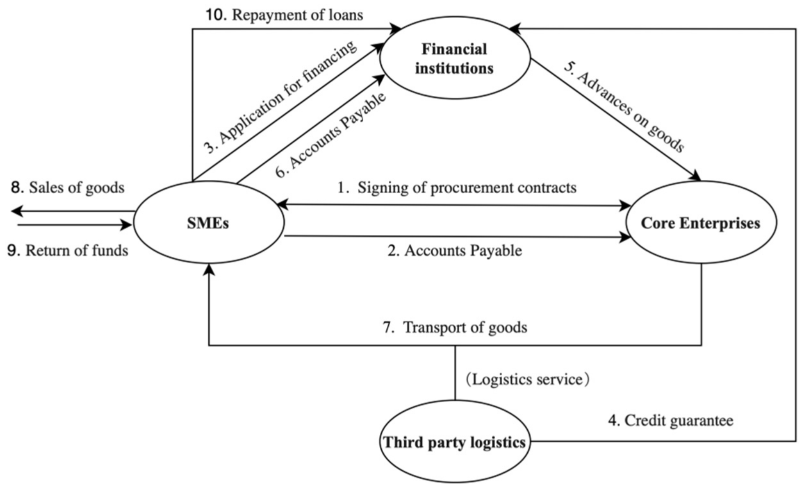


Figure 1: Accounts payable model.

3.2 Accounts Receivable Model

In the sales phase, SMEs are mainly financed through accounts receivable. As shown in Fig 2, After reaching a sales contract with the core enterprise, the SME pledges its accounts receivable claims against the core enterprise to the financial institution. The financial institution investigates the credit status of the core enterprise, its repayment ability and the operation of the entire supply chain to assess the transaction risk and determine the loan amount; if necessary, it will sign a repurchase agreement with the core enterprise. Third-party logistics companies provide credit guarantees in the process. The SME can obtain a short-term loan to complete the purchase of raw materials, production and processing activities, and transportation activities to fulfil the order; the core enterprise will repay the loan to the financial institution after the order is delivered.

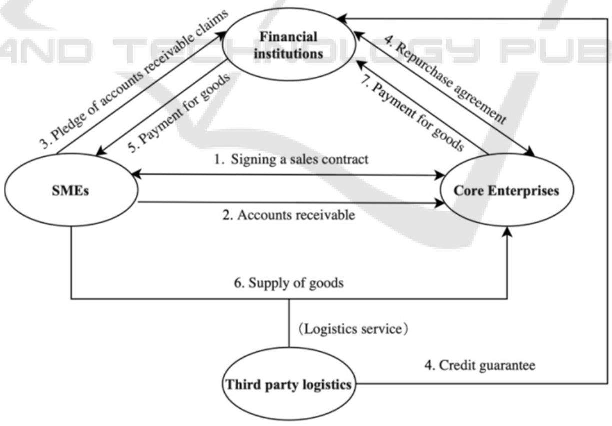


Figure 2: Accounts receivable model.

3.3 Confirming Warehouse and Financing Warehouse Model

Fig 3 reflects the basic process of Confirming warehouse and financing warehouse models. During the operational phase, SMEs will use the confirmed and collateral models to finance their operations. In the confirmatory warehouse financing model, the SME reaches an agreement with the financial institution to pledge the purchased warehouse receipts to the financial institution; the seller enterprise will send the goods to a designated warehouse after receiving the silver cheque paid by the buyer, with the bank controlling the right to pick up the goods and the third party logistics responsible for supervising the flow of materials as well as the value assessment records; the seller will store the items in the designated warehouse. In this way, downstream enterprises can solve the difficulties of collateral and alleviate the pressure of large-volume funding in a short period. In the warehouse financing model, enterprises apply for loans from banks with their inventory as pledges, and the third-party logistics agency inspects, evaluates and supervises the pledges.

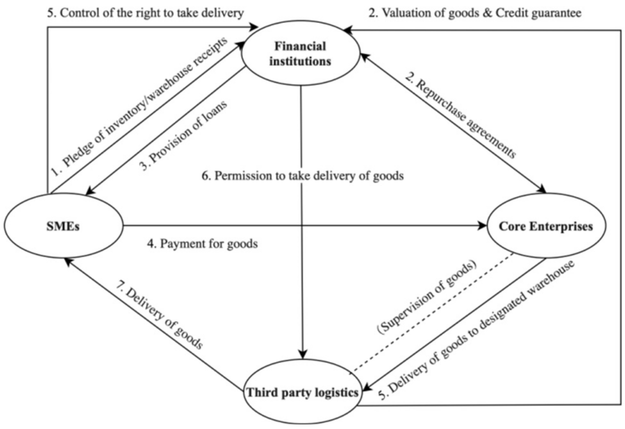
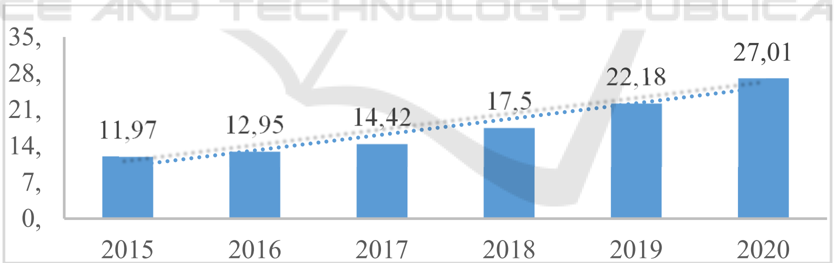


Figure 3: Confirming and financing warehouse model.

4 SUPPLY CHAIN FINANCE DEVELOPMENT STATUS

According to the statistics of Huachuang Consulting, the scale of China's supply chain finance market will increase from 2015 to 2022. It was 11.97 trillion yuan in 2015, 12.95 trillion yuan in 2016, 14.42 trillion yuan in 2017, 17.50 trillion yuan in 2018, 22.18 trillion yuan in 2019 and 27.01 trillion yuan in 2020. Supply chain finance offers SMEs a more flexible and affordable funding approach than traditional lending options, which compensates for their poor creditworthiness.

Table 2: The market of SCF.



Statistics from the CBRC show that the loan balance of inclusive micro and small enterprises in banking financial institutions is increasing and the interest rate of inclusive micro and small enterprise loans is decreasing. the loan balance in the first two quarters from 2019 to 2022 is $43 trillion, $56 trillion, $72 trillion and $42 trillion, and the loan interest rates are 6.7%, 5.88%, 5.69% and 5.35%.

Financial institutions only take into account the credit risk associated with funding businesses under the conventional financial model. When evaluating loan issuance, supply chain finance breaks down the silos across supply chains by taking into account the credit standing of core firms, the operation of each link upstream and downstream, the credit history of SMEs, and the assured efficacy of logistics enterprises.

The use of supply chain finance in SME financing has greater space for growth now that big data, cloud computing, and blockchain technology are supporting it. This paper makes the following recommendations for encouraging the use of supply chain finance in SME financing.

All of China's main commercial banks have started offering services relating to supply chain finance, so far as financial institutions are concerned. All of China's main commercial banks have started offering services relating to supply chain finance, so far as financial institutions are concerned. They include Ping An Bank, China Minsheng Bank, China CITIC Bank, etc. Through Internet technology, they build online supply chain financial service platform, apply supply chain financial information management system and provide intelligent product system such as supply chain cloud account. China Minsheng Bank has launched "Purchase e", "Order e" and "Xinrong e" series products, Guangdong Development Bank has launched "Logistics Bank.

Data show that in the first half of 2022, Ping An Bank's supply chain finance financing amounted to 542.452 billion, up 24.0% year-on-year. China CITIC Bank's cumulative supply chain financing during the reporting period amounted to 382.587 billion yuan, up 53.53% year-on-year comparison, with 15,796 financing customers, up 60.92% year-on-year. China Merchants Bank provided supply chain financing for 15899 enterprises with 208 billion yuan as of the first half of the year. Industrial Bank had a supply chain financing balance of 318.697 billion yuan and a bill pool financing business volume of 121.817 billion yuan by the end of June.

On the enterprise side, logistics enterprises themselves have the advantage of information tracking systems and commodity evaluation systems, and they also control the transportation of actual commodities. Foreign logistics enterprises UPS set up UPSC to provide supply chain financial services, including inventory financing, accounts receivable, etc.; domestic Shunfeng company set up Shunyin Finance to provide warehouse financing, order financing and other services. Besides logistics enterprises, the giant core enterprises of various industries have also entered to participate in the supply chain finance business. Sanquan Food registered the establishment of Zhong Run Quan Rong (Tianjin) Commercial Factoring Co. Guoneng Group registered Guoneng (Beijing) Commercial Factoring Co., Ltd. and Southern Pearl (Tianjin) Commercial Factoring Co. Beijing Byte Jump Network Technology Co., Ltd. incorporated Hainan Word Jump Commercial Factoring Co. Gome developed account cloud loan, credit cloud loan, goods cloud loan, invoice cloud loan four products. Relying on its own logistics system, Jingdong launched the "Jingbao Bei" Internet financial service.

5 SUGGESTIONS

The empirical study by Weibin Zhang and Ke Liu demonstrates that SMEs have obvious financing constraints (Zhang and Liu 2012), and with the development of supply chain finance the financing constraints faced by SMEs have been alleviated to a certain extent. Gu Qun's study demonstrates that the development of supply chain finance can alleviate the financing constraints of SMEs from the perspective of investment-cash flow sensitivity (Gu 2016). Ali, Z., Gongbing, B. and Mehreen, A. show that trade digitization strengthens the relationship between SCF and SMEs performance. The relationship between SCF and SMEs performance (Ali, B, and Mehreen 2020).

5.1 Improving Information Technology

The need to keep the business status and goods up-to-date between companies, banks and third-party logistics requires each link to improve information technology. Blockchain technology, cloud computing and other services will all be of great help in the process of improving information technology. Blockchain technology enables information security to be efficiently shared across all parts of the supply chain and ensures maximum authenticity and trustworthiness of information. The Internet of Things enables timely updating of information in the process of delivery of goods. In the process of informationization, attention should be paid to the joint participation of all parties to try to avoid the emergence of an information gap.

5.2 Establish a Credit Assessment System

Supply chain finance has unique advantages in weakening the credit risk of SMEs, reducing information asymmetry and solving the problem of lack of collateral security. When evaluating businesses for funding for SMEs, banks now evaluate the performance of the entire supply chain rather than just one particular organization (Yan and Xu 2007). In most cases, the transaction's assurance may be provided by the main businesses and third-party logistics companies. In the financing process, the introduction of logistics enterprises and storage supervisors helps banks to better track the flow status and value changes of pledges or collaterals, solving the drawback of lack of relevant information in movable pledges. By changing from the traditional two-party model to a three-party model, information asymmetry and risk management problems will be improved, so the willingness of financial institutions to provide financing to SMEs will be increased, and the financing channels of SMEs will be expanded.

5.3 Promote Supply Chain Upgrading

A modern supply chain is a cohesive system of information flow, money movement, and logistics. Supply chain finance depends on the flow of logistics and information to move capital, and moving money places more demands on the flow of logistics and information, requiring an upgrade of both. The three streams of development can work together to enhance the supply chain as a whole. Although logistics, information flow, and capital flow are essentially unseen, they are represented in an organization's capability for distribution, information exchange, and capital turnover. When it comes to information flow during the SME funding procedure, in the process of SME financing, to pull the capital flow, there is a need for timely information exchange between all parties to reduce the risk of information asymmetry. Banks monitor and assess financing risks by obtaining information on the operations of each enterprise in the supply chain; logistics and warehousing enterprises need timely information to arrange distribution activities and assess the value of their products, and enterprises need to transmit production information promptly to improve the efficiency of the supply chain.

5.4 Formation of Authoritative Regulatory Organizations and Improvement of Relevant Policy Regulations

China's banking and financial sectors have authoritative industry organizations, such as the China Banking and Insurance Regulatory Commission, the People's Bank of China, etc. The two things, authoritative organizations and improving relevant policy regulations, go hand in hand. Authoritative organizations can gather experts and talents to promote research on the supply chain finance industry, thus providing a reference for the improvement of policies. The improvement of policies is a prerequisite for the sustainable development of the supply chain finance industry.

6 CONCLUSION

A four-way win-win solution to the credit risk issue, which is essential to resolving the financing issue for SMEs, is provided by supply chain finance. It aids in resolving the funding issue facing SMEs, expanding the revenue stream for logistics companies, lowering the loan risk for financial institutions, and enhancing the effectiveness of core businesses and even the entire supply chain. With the advancement of technology such as blockchain, the internet of things and AI will back up SMEs' reforming towards digitization, which will further prompt the convenience of the use of supply chain finance and lead SCF into the use of more industries. It is out of doubt that SCF have huge potential both in solving the problems of SMEs' financing.

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