A Novel Risk Control Method of Supply Chain Finance for Commercial Banks with Big Data

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Abstract. Commercial bank supply chain financial business is mainly divided into accounts receivable financing mode, inventory financing mode and advance financing mode. Traditional supply chain financial business of commercial banks in different modes will form different risks, including small and medium-sized enterprise credit risk, the core enterprise credit risk and credit risk of the third-party logistics warehousing company. Under the background of increasingly powerful financial science and technology, we can use more financial technology through big data multidimensional collecting enterprise information, establishing intelligent risk control process, establishing the core enterprise credit evaluation system, preventing the core and small and medium-sized enterprises collusion fraud, preventing the third-party logistics warehousing enterprise credit risk, and reducing the risk of commercial banks supply chain financial business.

Keywords: finance, big data, commercial banking, supply chain finance, FinTech.

1. Introduction

According to the 2021 Report on the Financing and Development of Micro, small and medium-sized enterprises in China, the scale of small and medium-sized enterprises accounts for 96.5% of market entities in China, contributing about 60% of GDP every year and creating 80% of jobs. Since 2021, the profit growth rate of small and medium-sized enterprises has been significantly decreased [1]. The important reason for the decline in profits of small and medium-sized enterprises comes from difficult financing, expensive financing, poor financing efficiency and other problems. The loan balance of small and micro enterprises increased from 27.7 trillion yuan in 2016 to 43.2 trillion yuan in 2020, with a compound annual growth rate of 12.2%. However, based by economic contribution, the loan space of small and medium-sized enterprises is expected to be 1.5~2.3 times of the current scale [1]. Due to the imperfect development of China's financial market, the financing of small and medium-sized enterprises still mainly rely on commercial banks loans. Imperfect rules and regulations, imperfect financial system, weak capital strength, poor risk resistance ability and other factors seriously restrict small and medium-sized enterprises to obtain loans from commercial banks [2]. At present, most of the large commercial banks in China combined with their own advantages and strategic development goals have carried out the supply chain finance business, supply chain finance participants credit risk, macro market risk, commercial bank employees, supply chain internal risk and legal risk, which are the main risks in the process of supply chain financial business. These risks make commercial banks reluctant loans for small and medium-sized enterprises, and increase the small and medium-sized enterprise financing constraints [3]. Therefore, this paper through the detailed division of commercial banks existing supply chain finance model analyze the relationship between the participants in different supply chain finance business model and risk formation mechanism, under the background of increasingly powerful FinTech, how to effectively apply big data and other FinTech to the supply chain finance scenario of commercial banks, improve the efficiency of commercial bank supply chain financial credit and reduce credit risk, improve the efficiency of small and medium-sized enterprise financing and reduce financing cost, effectively help financial regulators manage financial market and reduce systemic risk, which are worthy of further research.

2. Risk Types of Supply Chain Finance

2.1. Accounts Receivable Financing Mode

Accounts receivable financing mode is one of the most common modes in supply chain finance business, which can be divided in details into: factoring business, factoring pool financing, reverse factoring financing and other modes. Accounts receivable financing refers to that small and medium-sized enterprises, as upstream suppliers, do not immediately receive payment after selling goods to the downstream core enterprises, but receive accounts receivable as an alternative. When small and medium-sized enterprises are short in daily production and operation funds, they sell accounts receivable to commercial banks at a discount to obtain working capital. In the process of accounts receivable financing, relying on the downstream core enterprise credit qualification guarantee, commercial banks will finance for small and medium-sized enterprises. Small and medium-sized enterprises usually need to send goods first to achieve the real right transfer to make the contract effective. Commercial banks confirm the existence of real trade contracts between upstream and downstream enterprises through credit review, and then release funds. Through the accounts receivable financing mode, small and medium-sized enterprises can optimize the balance sheet, realize the assets out, shorten the accounts receivable cycle, and improve the efficiency of capital use.

2.2. Inventory Financing Mode

Inventory financing is one of the business models of supply chain finance, which is mainly applicable to enterprises with large inventory of raw materials and finished products and a long inventory turnover cycle. Inventory financing is divided into static pledge credit, dynamic pledge credit, warehouse receipt pledge credit and other modes. Inventory financing refers to the loan financing of small and medium-sized enterprises to commercial banks with raw materials and finished goods as collateral when the operating funds are insufficient. In the process of inventory financing, the market value of the subject matter is crucial to the commercial banks. Some goods (metal materials, textile materials, etc.) are of stable quality, which are favored by the banks; some goods (food, medicine) have unstable quality, which will greatly reduce the willingness of commercial banks to lend; some goods (metals, crops) market futures prices are unstable, which is not suitable for inventory financing mode. With the development of modern logistics industry and the rapid development of logistics finance, commercial banks will select qualified third-party logistics warehousing enterprises as partners, and small and medium-sized enterprises in need of inventory financing can deposit the pledge to the third-party logistics warehousing enterprises designated by commercial banks, and then commercial banks will lend money to small and medium-sized enterprises. Once the small and medium-sized enterprises default, the commercial bank may order the third-party logistics warehousing enterprise to help sell the goods pledged by the small and medium-sized enterprise and return the payment for the sales to the commercial bank, and the third-party logistics warehousing enterprise may earn the warehousing management fee. Different from receivables pledge financing, third-party logistics warehousing companies, futures exchanges and futures brokerage companies are introduced into the inventory financing model. The participation of these participants will add new risks to the supply chain finance business of commercial banks. In addition, according to the characteristics of inventory financing, inventory financing mode is that financing enterprises use movable property mortgage and pledge to obtain funds from commercial banks, so the fluctuation of inventory quality and value will also bring certain risks to the supply chain finance business.

2.3. Prepayment Financing Mode

Advance payment financing is divided into two modes: ticket credit after payment and guarantee warehouse credit. It refers to the financing method in which commercial banks pay instead of the buyers of small and medium-sized enterprises. When small and medium-sized enterprises sell the goods purchased from the core enterprises, they return the payment to the commercial banks. Under

the advance payment financing mode, if the products of core enterprises sell well and the inventory turnover cycle of small and medium-sized enterprises is short, small and medium-sized enterprises will need a large amount of funds for procurement. After purchasing products through advance payment financing, they can directly use inventory financing to form a "seamless connection". The main participants in the advance payment financing model are the upstream core enterprises of the supply chain, the downstream small and medium-sized enterprises, commercial banks and third-party logistics and warehousing enterprises. Unlike the accounts receivable financing model, in the advance payment financing, small and medium-sized enterprises as downstream distributors, and the core enterprises, as the upstream suppliers, small and medium-sized enterprises shall pay a certain proportion of the deposit to commercial banks according to the amount of payment. Commercial banks help small and medium-sized enterprises to pay to core enterprises according to the amount of deposit. After receiving the payment from the commercial bank, the core enterprise will deliver the goods through the third-party logistics and warehousing enterprise. In this series of processes, any link risk will bring credit losses to commercial banks [4].

3. Formation Mechanism of Supply Chain Finance Risk of Commercial Banks

3.1. Accounts Receivable Financing Mode Risk Formation Mechanism

3.1.1 Risk Formation Mechanism of Factoring Business Model

Factoring financing business means that after the commercial bank accepts the accounts receivable of the upstream seller enterprise, it pays the accounts to the seller enterprise. When the accounts receivable mature, the downstream buyer enterprise pays the payment to the commercial bank (see Figure 1). In this business process, the risks easy to arise mainly exist in the qualification examination of the downstream buyer enterprise, whether there are market risks of the buyer enterprise in the short term and the authenticity of the upstream seller enterprise's receivables. Firstly, the term of accounts receivable is generally 90 days to 180 days, so commercial banks should review the qualification of downstream buyer enterprises and investigate whether the buyer enterprises have the repayment ability in the future. Secondly, commercial banks should also investigate the short-term development prospects of the industry and whether there are cyclical market risks in the future repayment period, which make the future cash flow of the buyer enterprises fluctuate greatly. Finally, the commercial bank needs to investigate whether the transaction between the buyer's enterprise and the seller's enterprise really exists. If the two parties are equity-related companies and use a Yin-Yang contract, the commercial bank needs to call and arrange experienced staff to identify and prevent the transaction. At the same time, it is necessary to prevent the staff of commercial banks from violating professional ethics, colluding with the enterprises, in fraud and helping enterprises obtain financing in violation of the law.

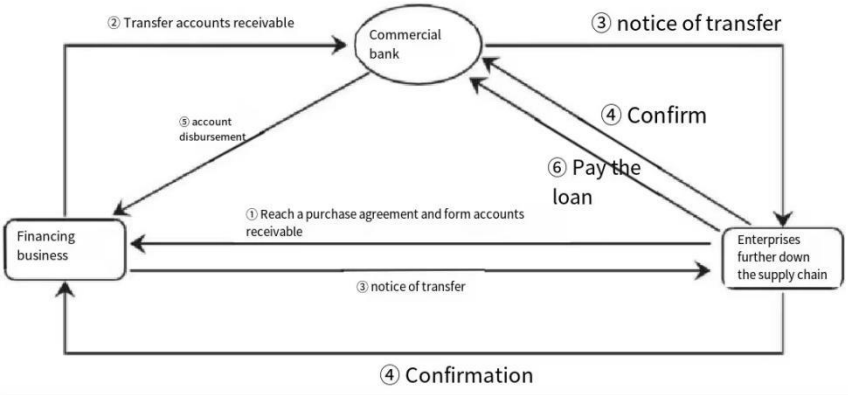


Fig. 1 Factoring business process

3.1.2 Risk Formation Mechanism of Factoring Pool Financing Mode

The factoring pool financing business under the accounts receivable financing mode means that the accounts receivable transferred by the seller enterprise to the commercial bank are not one account receivable from a buyer enterprise, but multiple accounts receivable held by the seller enterprise to be transferred to the commercial bank as a package. These accounts receivable may come from different enterprises, show different amounts, or even different periods. Therefore, the process of factoring pool financing business is basically the same as that of factoring financing business, but commercial banks need to issue transfer notices to different buyer enterprises (see Figure 2). When commercial banks deal with the financing business of factoring pool, the financing risks mainly exist in the buyer's enterprise qualification and the authenticity of accounts receivable. Although compared with the factoring financing model, factoring pool financing model can help commercial banks to disperse risks caused by the accounts receivable financing, equivalent to the "egg" in the different baskets, but this means that increased the commercial banks for the buyer's enterprise qualification review. At the same time, in the audit process, the mistakes caused by the intentional or unintentional behavior of the staff of commercial banks in the audit process belong to the operational risks of factoring pool business, which may bring certain risks to the recovery of funds in the later stage of commercial banks. Therefore, some commercial banks, for the sake of insurance, usually choose customers with good credit record and long-term cooperation to reduce the financing risk of commercial banks. In addition, in the process of factoring pool financing, the effective documents of accounts receivable into the pool should be strictly checked, and the authenticity of production transactions between enterprises should be investigated on the spot to ensure the authenticity and effectiveness of accounts receivable. On this basis, a sound accounts receivable information management system should be established, and the real-time and authenticity of accounts receivable should be strictly examined to monitor and track the transactions, logistics, settlement and other businesses between buying and selling enterprises in real time.

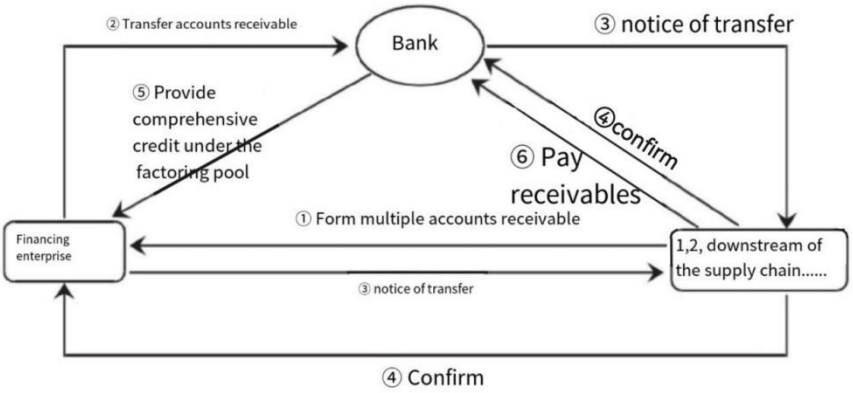


Fig. 2 Credit granting business process of the factoring pool

3.1.3 Risk Formation Mechanism of Reverse Factoring Financing Mode

Reverse factoring and financing mode are similar to factoring financing mode and factoring pool financing mode. The main participants are also commercial banks, buyer enterprises and seller-side enterprises (see Figure 3). Different from the factoring model and the factoring pool model, the buyers in the reverse factoring financing model are generally relatively powerful large enterprises. As the core enterprises in the supply chain, they have a high status in the industry, good financial status and high credit level, which are favored by commercial banks. The principle of reverse factoring business process of commercial banks is to rely on the authoritative credit of core enterprises to provide guarantee for upstream small and medium-sized enterprise suppliers. As long as small and medium-sized enterprise suppliers hold the accounts receivable of core enterprises, commercial banks accept the accounts receivable held by small and medium-sized enterprise suppliers based on the credit rating of core enterprises and wait for the payment due by core enterprises. In this financing mode, commercial banks usually ignore the suppliers of small and medium-sized enterprises that need

financing, and only audit the core enterprises in the supply chain. Therefore, the credit qualification of the core enterprises plays a vital role in the whole financing business. Commercial banks should focus on examining the financial status and production and operation status of the core enterprises, and regularly investigate the market risks of the industries where the core enterprises are located to ensure the capital liquidity of the core enterprises in the future. In particular, some core enterprises have large scale and long supply chain, so the amount of receivables issued is usually large and the account period is long. These long-term and large receivables will bring certain risks to the reverse factoring financing business of commercial banks.

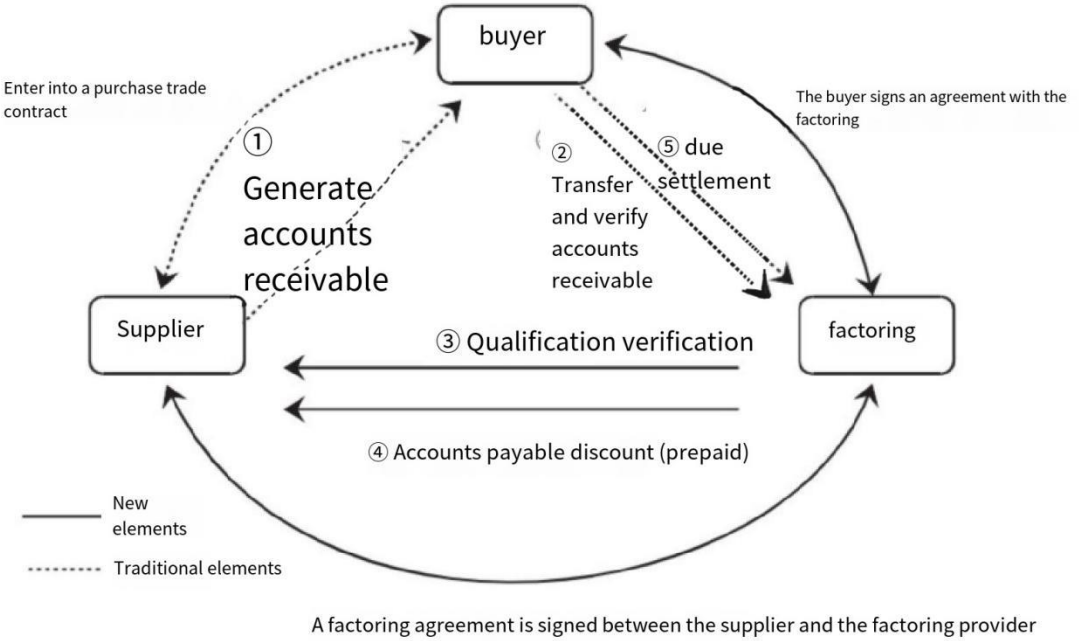


Fig. 3. Reverse factoring business process

3.2. Risk Formation Mechanism of Inventory Financing Mode

3.2.1 Risk Formation Mechanism of Static Pledge Credit Granting Mode

In the static pledge and credit granting mode of commercial banks, if financing enterprises want to obtain loans from commercial banks, they should first reach an agreement with the third-party logistics and warehousing company designated by commercial banks, and deliver certain pledges to the third-party logistics and warehousing company. The pledges cannot be bartered before redemption, and then commercial banks lend loans to financing enterprises. The commercial bank then informs the third-party logistics warehousing company to release the goods (see Figure 4). In the static pledge credit granting business, the risks borne by commercial banks mainly come from the value of the pledge. First of all, financing enterprises quality their internal raw materials or finished products to invigorate their funds, but it is difficult to unify the value estimation of raw materials or finished products. The price of some futures commodities is affected by the market, and the price fluctuates greatly. If the financing enterprises choose to default and give up the pledge after maturity, the commercial banks will suffer huge losses. Secondly, third-party logistics and warehousing enterprises, as new participants, join the static pledge credit business, and the qualification of logistics and warehousing enterprises is crucial for commercial banks to prevent and control the credit risk of static pledge. The management level of logistics and warehousing enterprises, facilities of hardware and software, and whether they can perform the third-party supervision function will affect the quality and safety of the pledge. Problems in the pledge will cause risks and losses to the static pledge credit of commercial banks. What's more, financing enterprise quality of raw materials or finished goods is usually used to sell profit capital, take out the pledge to obtain loans. Although the working capital of enterprises can be revitalized in the short term, at the same time, it also affects the sales revenue of enterprises in the next stage. Such operational risks will also pose a threat to the static mortgage

and credit business of commercial banks. Finally, commercial banks should also prevent the credit risks caused by the collusion between financing enterprises and third-party logistics and warehousing companies and the operational risks caused by the problems in the loan process such as the verification of pledges.

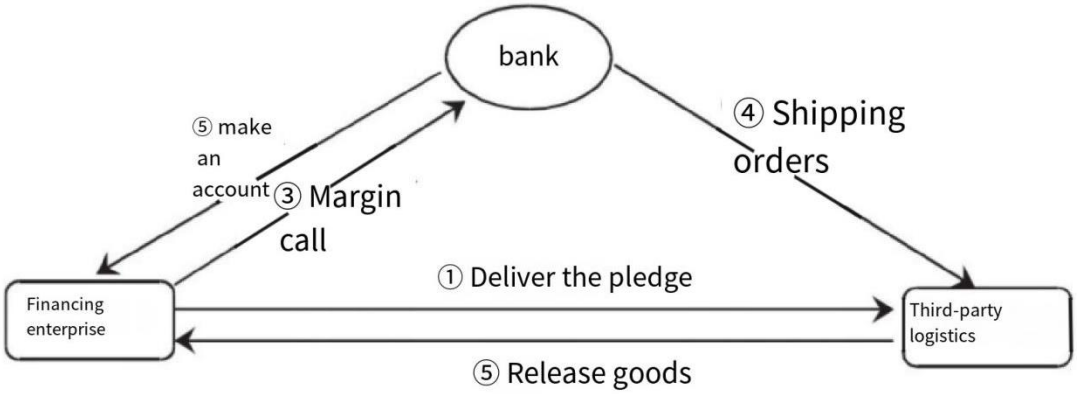


Fig. 4 Static pledge credit granting business process

3.2.2 Risk Formation Mechanism of Dynamic Pledge Credit Granting Mode

The dynamic pledge of the commercial bank credit business is very similar to that of the static pledge credit business. The main differences are: In the static pledge and credit granting business, the financing enterprise shall not barter or take the pledge from the third-party logistics and warehousing enterprise in advance before returning the loan; In the dynamic pledge and credit granting business, the financing enterprise can barter the third-party logistics and storage company within the limit allowed by commercial banks, improve the liquidity of the pledged goods, and make regular exchange to ensure the normal sale and circulation of the enterprise's products (see Figure 5). Therefore, commercial Banks in the dynamic pledge credit business risk prevention, in addition to the static pledge credit business should be to pay attention to the risk, should also focus on financing enterprises in the process of barter in shoddy, pledge quantity, amount and the initial pledge quantity and amount of approved phenomenon. This requires third-party logistics warehousing enterprises to have a higher professional quality, strictly examine the entry and exit of pledges, protect the rights and interests of commercial banks, and reduce the risk of commercial banks' dynamic mortgage and credit granting business.

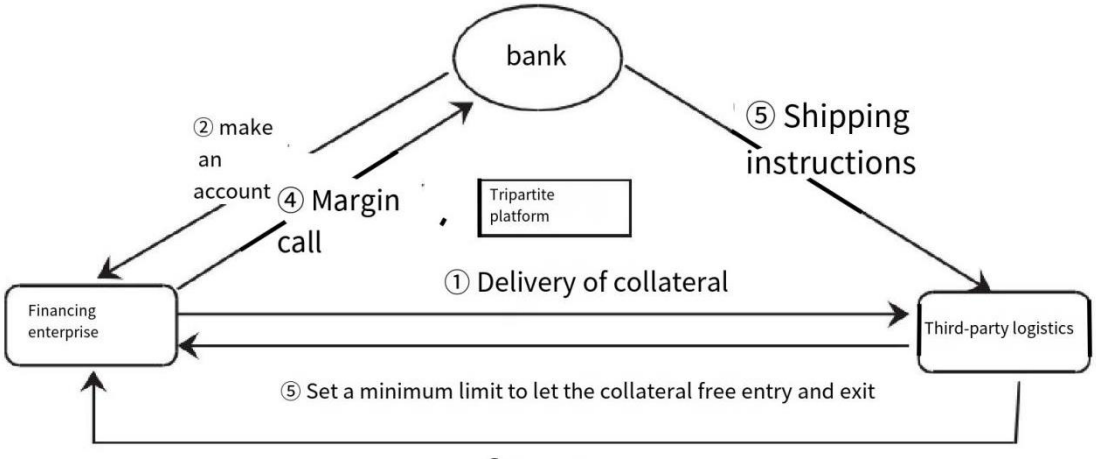


Fig. 5 Dynamic pledge credit granting business process

3.3. Risk Formation Mechanism of Standard Warehouse Single Quality and Risk Formation of Credit Granting Mode

Under the standard warehouse receipt pledge financing mode, futures exchanges and futures brokerage companies, as new participants, will bring new risks to the standard warehouse receipt

financing business. First of all, the most important difference between warehouse receipt pledge credit granting and pledge credit granting lies in the difference of pledge property. The pledge of the warehouse receipt is usually raw materials and finished products, while the pledge of the warehouse receipt is usually the warehouse receipt. Therefore, if the futures exchange loses the warehouse receipt during the pledge period, or the warehouse receipt of the financing enterprise is maliciously suspended, the commercial banks will face the risk of invalid pledge. Secondly, because the pledge delivered by the financing enterprises has futures properties, the price of the pledge fluctuates greatly in the futures market. If the financing enterprises fail to repay the money on time, when the commercial banks choose to implement the pledge, it will be affected by the price changes in the pledge market, and the commercial banks will face greater risks. Finally, when dealing with the warehouse receipt pledge financing business, the post-loan management problem is the greater operational risk that commercial banks will face (see Figure 6). These loans include: First, whether the loans obtained by the financing enterprise are used to engage in corresponding production and business activities in accordance with the requirements of the contract, rather than other purposes; Second, regular inspection of the production, operation and management of loan enterprises, financial status, inspection of the industry market development environment, enterprise legal person, senior executives have significant adjustment changes, repayment sources can be implemented; The third is the risk of collateral value fluctuation. If the staff of commercial banks do not test the market value of the collateral of warehouse receipt on time, do not remind the loan enterprises to make a timely margin call after the price of the collateral drops, and do not timely send the notice letter of entrusted delivery result to the loan enterprises when the loan safety reaches the disposal line, commercial banks will bear certain risks in this business.

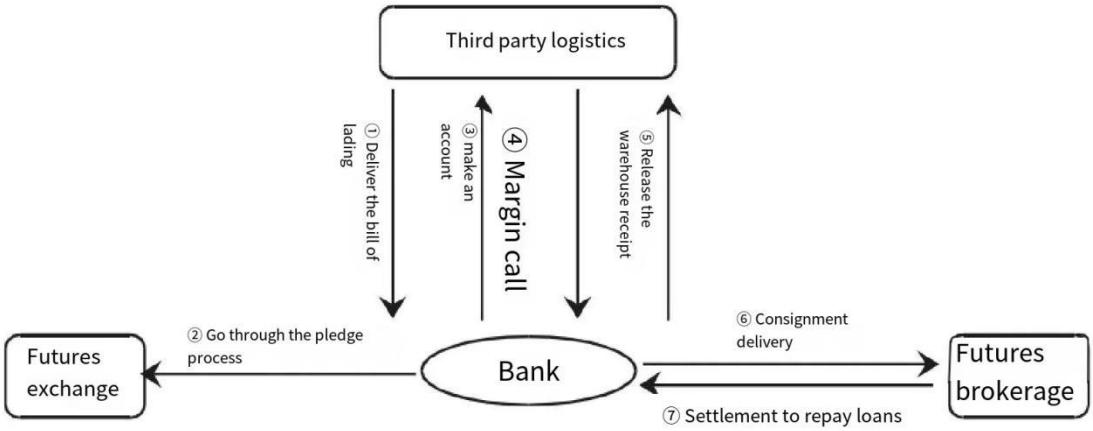


Fig. 6 Standard warehouse receipt pledge process

3.4. Risk Formation Mechanism of Advance Payment Financing Mode

3.4.1 Risk Formation Mechanism of Credit Granting Mode after Ticket Payment

As a typical prepayment financing model, the credit mode of bill first and goods later forms risks. In addition to the credit risk of financing enterprises mentioned in the previous model, the market risk of production and operation of financing enterprises, the supervision ability of third-party logistics and warehousing enterprises, and the moral hazard of collusion between enterprises to cheat loans, commercial banks should also examine the performance ability of the upstream seller enterprises, such as delivery and refund (see Figure 7). If the seller fails to timely deliver the goods to the third-party logistics enterprise after the commercial bank makes the payment to the upstream seller enterprise, or the goods need to be returned for refund if there are problems with the goods after delivery, the buyer's financing enterprise fails to receive the goods on time, so it cannot timely make the margin call and the commercial bank's loan funds cannot be recovered normally. In addition, in the credit mode of payment before goods, it involves the transport and storage of goods, and the identification of the liability for damage and loss of goods in the transit link needs to be clear. Once

goods are damaged, if both the buyer and the seller and the third-party logistics and warehousing company do not bear the responsibility, the loan paid by the commercial bank to the upstream seller will be unable to be recovered. Finally, after the seller manufacturer receives the payment for goods from the commercial bank, the goods will be delivered to the third-party logistics company. After the logistics company receives the goods, the storage link of the goods shall be strictly controlled. The third-party logistics company will pledge the goods and release the goods only after the buyer's financing enterprise makes a margin call. Before this, the storage of goods is crucial. Commercial banks should not only ensure that logistics and warehousing enterprises take good care of the goods, but also prevent financing enterprises from colluding with logistics enterprises to cheat loans. Before financing enterprises do not add margin, logistics enterprises will ship goods to financing enterprises, and commercial banks cannot recover the margin.

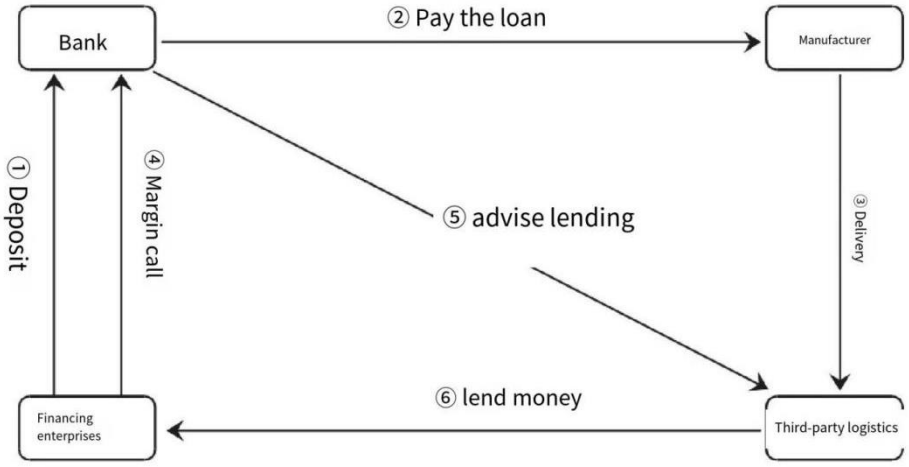


Fig. 7 Business process of first ticket payment and then credit extension

3.4.2 Risk Formation Mechanism of Credit Granting Mode of Guarantee and Delivery (Confirmed Warehouse)

The guaranteed delivery credit mode, also known as the guaranteed warehouse credit mode. The main participants are commercial banks, financing enterprises, suppliers and third-party logistics and warehousing enterprises. Sometimes suppliers have logistics and warehousing functions, so only three parties participate (see Figure 8). From the perspective of the process of guarantee delivery credit mode, similar to the goods credit mode after advance payment, the main difference between the two is that the guarantee delivery credit mode focuses on the word "guarantee". In the cargo credit model, if the buyer financing enterprise refuses to raise the margin, then the commercial bank cannot recover the funds, the commercial bank has the right to request the supplier or the third-party logistics warehousing company of the supplier to directly repurchase the goods and return the remaining loan to the commercial bank to reduce the loss and risk. Therefore, in the mode of guarantee, pick delivery and credit granting, it seems that the risks of commercial banks have been minimized. Even if the financing enterprises cannot repay the payment on time, commercial banks can also get balance compensation from the seller's supplier or the third-party logistics and warehousing company. However, in the actual guarantee and delivery credit mode, the choice of third-party logistics warehousing enterprises and the contracts signed between commercial banks and logistics enterprises will make commercial banks subject to certain operational risks and legal risks. Due to the complex legal relationship, the judicial agency does not have a clear judgment standard for the dispute of the warehouse business. Under the current model, if there is a dispute in the loan relationship, it is generally handled in accordance with the provisions of the loan contract, and the dispute of the warehouse contract will be handled in accordance with the provisions of the warehouse contract. In reality, in order to avoid their own liability, some manufacturers may stipulate the exemption clause in the contract, so as to avoid the repurchase liability and guarantee liability.

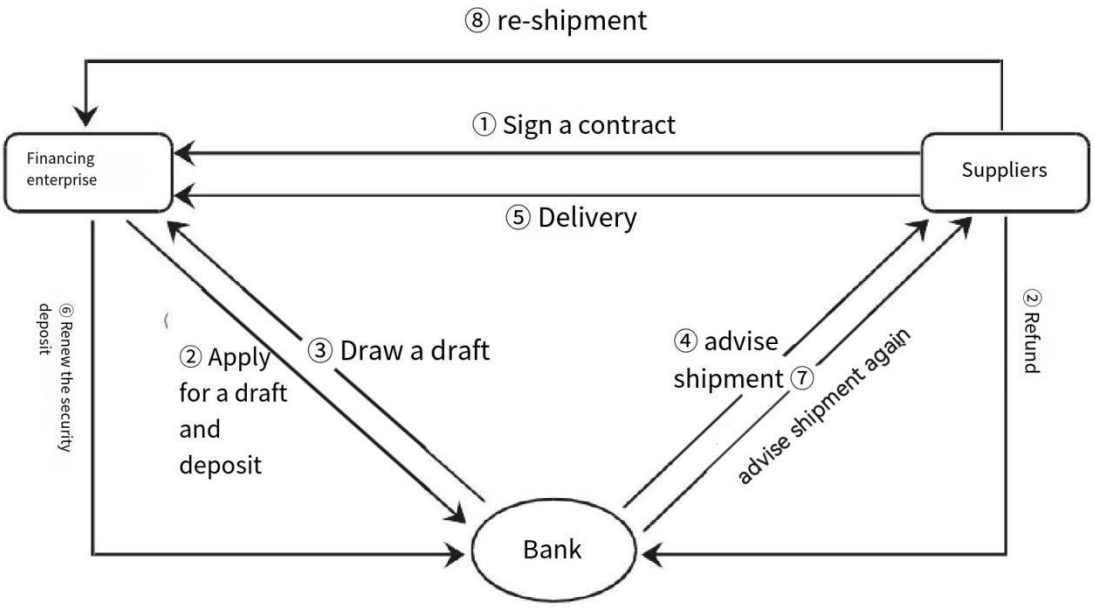


Fig. 8 Business process of the three-party confirmed warehouse

4. Conclusion

4.1. Using Big Data Technology to Collect Enterprise Information from Multiple Dimensions

Through the information collection ability and high-performance computing ability of big data technology, it can effectively solve the problems of enterprise information acquisition difficulties in the supply chain finance business of commercial banks. In the traditional supply chain finance business, commercial banks only collect the financial data information of financing enterprises and evaluate the credit risk of financing enterprises through the financial data information. This evaluation method has certain limitations [5]. Using big data technology, it is possible not only to collect financial data of enterprises and analyze relevant indicators, but also to collect the development prospects of the industry where the financing enterprises are located, the transaction operation of financing enterprises in the supply chain, and the credit rating, tax status, customs records, payment of social security of financing enterprises and other information of the financing enterprises. According to the business needs of different models of supply chain finance, different credit evaluation models and algorithms are developed to effectively identify the credit risks of financing enterprises and reduce the risks of supply chain finance business.

4.2. Establish an Intelligent Risk Control Process

The supply of financial business of commercial banks should set up data collection, behavior modeling, user portrait depiction, risk pricing and other process links. In the link of data collection, big data technology is used to collect the network behavior data, transaction data, third party data, cooperative institution data, enterprise preference data and other information of financing enterprise users; In behavior modeling, text mining, machine learning, cluster analysis and other methods are used to improve the ability of natural language processing and prediction algorithm. In the link of user portrait, the credit status of the enterprise can be determined according to the basic information of the enterprise user, transaction preference, transaction characteristics, enterprise strength and industrial status in the supply chain. In the link of risk pricing, according to the credit rating of enterprise customers, develop behavior monitoring model, anti-fraud model, default model and debt collection model. Through the above intelligent risk control links, the credit level of financing enterprises can be effectively evaluated to help commercial banks prevent credit risks.

4.3. Establish a Credit Evaluation System for Core Enterprises

Core enterprises play a vital role in the commercial supply chain finance business, and the reputation of the core enterprises can become the invisible credit guarantee for the financing of their upstream and downstream small and medium-sized enterprises. Financial indicators such as the scale, profitability and operating ability of the core enterprise determine whether the upstream small and medium-sized enterprises can recover the payment on time; the product reputation of the core enterprise determines whether the downstream suppliers can sell all the products and recover the funds as soon as possible. Therefore, commercial banks should follow up the operating status of core enterprises, and use big data technology to collect the credit information of core enterprises, enterprise financial data indicators, the development prospects of the industry and other relevant information. At the same time, we should also pay attention to real-time of the industry market data information and major legal and policy information at home and abroad. Integration of structured and unstructured data information, the use of artificial intelligence analysis of the core enterprise industry development prospect and development potential, to determine whether the core enterprise in the future for small and medium-sized financing enterprise credit guarantee qualification and core enterprises in the future management ability can drive the healthy development of the whole supply chain.

4.4. Prevent the Collusion and Fraud between Core Enterprises and Small and Medium-sized Enterprises

In the traditional supply chain finance loan approval process, commercial banks only examine the credit qualification of small and medium-sized enterprises and core enterprises in the loan chain, and pay less attention to the information of other enterprises, which leads to some financing enterprises colluding with core enterprises to defraud commercial banks and obtain loans. Therefore, in the context of FinTech, commercial banks can use blockchain technology to supervise all data information in the whole supply chain, trace back the initial end of the transaction, monitor all trends of logistics, capital flow and information flow, analyze transaction records between enterprises, and strengthen information management and analysis with the help of smart contracts based on blockchain technology. For suspicious transactions between enterprises, suspicious fund movements and other unreasonable behaviors, artificial intelligence analysis should be used to generate vigilance, detect illegal activities between enterprises in advance, and avoid loan losses for banks.

4.5. Prevent the Credit Risks of Third-party Logistics and Warehousing Enterprises

In the commercial bank supply chain finance business, the third-party logistics warehousing enterprises responsible for the warehousing, transportation, storage and pledge supervision, because the pledge is an important guarantee of commercial bank supply chain financial risk, therefore, the third-party logistics warehousing enterprises can play an important role in the supply chain finance business [8]. Commercial banks should establish a strict audit and access mechanism for third-party logistics and warehousing enterprises, and investigate the logistics and warehousing technology level, financial strength and industry credit level of third-party logistics and warehousing enterprises, so as to ensure the safety and stability of supply chain finance business. First of all, commercial banks should cooperate with the third-party logistics warehousing enterprises into the bank internal review supervision system, regularly check the third-party logistics warehousing enterprise financial data indicators, including the third-party logistics warehousing enterprise cash flow, assets, liabilities, liquidity data, judge the third-party logistics warehousing enterprise operating conditions and solvency. If the evaluation index data show that the third-party logistics and warehousing enterprise has a good financial condition and the daily operation of the enterprise is smooth, then the credit evaluation results and future development potential of the enterprise will be identified as good. Once the financing enterprise defaults, or the third-party logistics warehousing enterprise does not take good care of the goods and collateral due to its own reasons, the third-party logistics warehousing enterprise should be able to repay the losses and reduce the loan losses of commercial banks. Secondly, commercial Banks should joint logistics association to set up a third-party logistics warehousing

enterprise leading group, overall planning and management, improve the supply chain logistics management system, regularly to the third-party logistics warehousing enterprises, clear the responsibility of each department, strengthen the supervision and guidance of third-party logistics warehousing enterprises. Finally, commercial banks should use big data technology and credit data platform to investigate the enterprise credit rating of third-party logistics and warehousing enterprises, check whether the enterprises have overdue loans; investigate the good reputation in the industry; and investigate the tax records of third-party logistics and warehousing enterprises, whether there is tax evasion and tax arrears. Establish a comprehensive credit registration and credit certification management system, conduct credit rating or score for all third-party logistics and warehousing enterprises, and encourage third-party logistics and warehousing enterprises to set up factories in compliance with the law and obtain a good credit rating.

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