

Research on Dynamic Risk Assessment and Management Optimization of Supply Chain Finance from the Perspective of Sharing

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Abstract: With the rapid development of Internet, big data, Internet of things and other information technologies, the sharing feature of traditional supply chain finance is more obvious. This research firstly sorts out the related concepts of supply chain finance, then elaborates the risk management process of supply chain finance, and finally constructs the sharing mode of supply chain finance risk management through sharing finance, which is conducive to realize the information system interaction and reasonable sharing of risks between enterprises and commercial banks.

1. Introduction

Supply chain finance is a new financing mode which has developed and swept the world in recent years.[1] It can effectively alleviate the financing difficulties of small and medium-sized enterprises by binding core enterprises and upstream and downstream enterprises into a flexible financing mode.[2] Supply chain finance can effectively ensure smooth operation through the coordination and integration of capital flow, logistics and information flow. [3] Domestic research on supply chain finance is relatively late and mainly emphasizes on two major fields: from the perspective of financing, the research mainly involves the possibility of financing and risk control of each participant in the supply chain; from the perspective of supply chain, the research mainly focuses on how supply chain finance can create value to the maximum extent under the collaboration of all parties involved in the supply chain. Compared with the financing perspective, the supply chain perspective widens the scope of supply chain finance and forms a complete ecological structure of supply chain finance.

2. Supply Chain Finance and Its Risk Management Process

2.1 Supply chain finance

To solve this problem, supply chain finance emerges at the right moment and becomes a hot development direction.[4] By taking the core enterprises on the supply chain as a whole, and relying on core enterprises and on the premise of real trade, supply chain finance (SCF) uses self-liquidated trade financing to close the capital flow or control the real right by means of pledge of accounts receivable and goods right pledge, so as to provide comprehensive financial products and services to the upstream and downstream enterprises in the supply chain.[5] SCF takes core enterprises as the starting point, focuses on the financing demands of SMEs around the upstream and downstream of core enterprises, and realizes the common development and sustainable operation of all enterprises in the supply chain through the effective transmission of information and resources in the supply chain system.

2.2 Supply chain finance risk management process

The basic process of SCF risk management is basically similar to other businesses of commercial banks, including risk identification, assessment, control and other links.

2.2.1 Risk identification

Risk identification refers to the analysis of the nature and types of risks to determine the possible losses caused by risk factors. This process not only aims to discover the risks in operation, but also to make clear of the causes of the risks. Risk changes with the change of the market. Therefore, risk identification is not immutable, and the continuous change of risk makes the risk identification need to follow up all the time. This requires risk identification to follow the risk path and identify the direction according to the change of the path. Since SCF involves many small and medium-sized enterprises, they bear the brunt of credit risk. Moreover, in the practice of SCF, another important risk source of SCF—operational risk is generated due to the large amount of information collection and approval, process management and control, as well as differentiated financing solutions and the extensive use of credit support technologies.

2.2.2 Risk assessment

The next step after identification is risk assessment. That is, comprehensive description and quantitative analysis should be carried out through appropriate evaluation methods. By collecting historical data and sample data, the formation probability of risk events and possible losses are analyzed. And to determine the risk tolerance and scope of the bank to determine whether to take appropriate risk control measures. How to correctly carry out risk assessment plays a decisive role in decision-making. However, China is currently in the period of economic transition, and it is difficult to establish a stable and universal model in the risk control system due to the influence of complicated and changeable factors such as macro-economy, business environment and industrial environment. At the same time, due to the lack of data accumulation and experience support in the field of SCF to a large extent, it is difficult to conduct quantitative analysis of different risks and use a model to measure and describe different business situations.

2.2.3 Risk control

According to the assessment results, necessary measures and appropriate measures should be taken to control the risks within the acceptable range. When the loss is unavoidable, some measures should be taken to recover the loss quickly and prevent the loss scope from expanding. It is necessary to take measures to disperse, hedge, transfer, avoid and compensate for the identified and measured risks. Risk control can be divided into advance control, intermediate control and afterwards control. Advanced control refers to the establishment of a standard or procedure prior to intervention in a business activity to avoid intervention in business areas where the risk exceeds its own capacity or where certain risk compensation measures are taken in advance. Intermediate control means that in the process of taking actions to achieve relevant control objectives or standards, information feedback about the actual situation can be obtained in a timely manner, so that the controller can find and solve problems, and then take measures to prevent and correct deviations. Afterwards control is to take a series of risk transfer or mitigation measures to reduce the risk level and control the risk within the target range on the basis of continuous risk monitoring and according to the risk level and risk change trend.

3. Shared Construction of Supply Chain Finance Risk Management

With the fast development of Internet information technology, the trend of sharing economy begins to penetrate into the financial field, and the traditional supply chain financial industry begins to develop towards the direction of “sharing finance”. The feature of sharing finance is that both the supply and demand of financial resources realize direct transaction of financial resources and services through cloud computing, big data, Internet of things and other modern information technology means. By introducing the thinking of sharing finance into the field of supply chain finance, the sharing of financial risks can be realized, thus helping the supply and demand of information and capital to effectively connect and improving the efficiency of supply chain financial services.

3.1 Sharing of information flow, logistics and capital flow

In recent years, commercial banks have shifted their supply chain services from “offline” to “online”, and launched many online supply chain financial products. For example, “Orange e” Platform launched by Ping An Bank, “Data Network Loan” launched by Agricultural Bank of China, and “Rong Yi Da” and “Xiao Yi Da” launched by bank of China. The biggest advantage of online platforms is that they can highly integrate information flow, logistics and capital flow, and effectively monitor the logistics and cash flow at the same time, and ultimately improve the efficiency and level of risk control.

3.2 Resource sharing

In traditional supply chain finance, there exists the problem of resource mismatch between commercial banks and core enterprises of industrial chain. With the acceleration of financial disintermediation and the improvement of core enterprises’ awareness of supply chain management, core enterprises set foot in the supply chain financial services by establishing their own finance companies and factoring companies. As a result, the relationship between commercial banks and industry leaders has changed from a simple partnership to a cooperative and competitive one. Core enterprises often prefer commercial banks to be the channels of funds, while commercial banks are concerned about how to expand customers and avoid being “pipelining”. Therefore, how to balance the core interests of both sides and achieve win-win cooperation has become a new focus. This problem can be solved by sharing financial resources along the supply chain. In the business of supply chain finance, commercial banks not only need to provide enterprises with funds, but also should provide investment and financing, capital management, capital operation and a series of financial services. In this cooperation process, commercial banks can further obtain the operation information of credit granting enterprises and reduce the credit risk caused by information asymmetry. Through sharing and cooperation, the allocation efficiency of supply chain financial resources can be enhanced.

4. Risk Management Optimization of Supply Chain Finance from the Perspective of Sharing Finance

Sharing finance will break the information barrier, resource mismatch, low trust value and other problems in the development of traditional supply chain. Through the fluidity and interactivity of data and information, it drives the integrated development of commodity flow and capital flow to improve the allocation efficiency of resources. As shown in Figure 1:

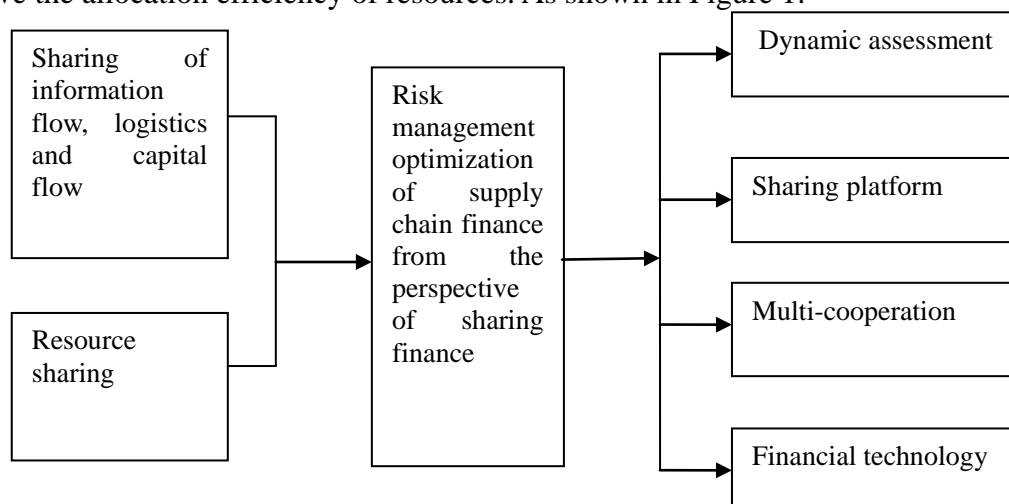


Figure 1 Risk management optimization of supply chain finance from the perspective of sharing finance

4.1 To Realize dynamic assessment of credit risk by information sharing

With the upgrading of industrial structure and technological progress, credit risk assessment in supply chain finance business should realize dynamic real-time tracking, dynamic detection and scientific prediction, and realize dynamic feedback of credit information.

Firstly, an index system of credit risk assessment of supply chain finance based on online model should be established. In the qualification examination of applicants, the enterprise quality, profitability, debt paying ability and development ability should be checked and investigated. In the operation evaluation of the supply chain, it is necessary to analyze such indicators as transaction time and frequency, industry status and performance.

Second, dynamic evaluation system need to be introduced. Specifically, it includes the trade background of core enterprises and chain enterprises, whether the trade activities are real and whether the trade risks are controllable, which will directly affect the debtor's credit decisions. Considering the market prospect of supply chain core enterprises and financing projects, and the cooperative relationship between debt subjects and core enterprises, the operating situation of loan subjects is comprehensively analyzed.

Thirdly, dynamic credit risk assessment cannot be divorced from the data processing and application of financial technology, so as to realize the whole process on-line, master data and strengthen risk control.

4.2 To Build a sharing platform for supply chain financial risk management

For a long time, the acquisition, confirmation and pledge registration of transaction, accounts receivable, inventory and other data and information in the supply chain have been the bottlenecks of the development of commercial banks supply chain financing business. Especially the problem of pledge registration is always difficult to tackle. In order to break through these bottlenecks, in recent years, People's Bank of China and other government departments, supply chain core enterprises, commercial banks and other forces have jointly established various supply chain financial service platforms. Such a shared platform not only provides enterprises with capital, but also a series of financial services such as investment and financing methods and asset management. How to effectively use the platform data information management supply chain financial risk is the key to future development.

4.3 To Supply chain financial risk management is inseparable from the multi-cooperation among the participants

Commercial Banks and core enterprises are deeply integrated to form a community of shared risks and benefits. At the same time, rigorous data sources can effectively reduce supply chain financial risks. It is not realistic to only control the offline risks. Big data is the future trend, the integration of data resources is the key to risk management, and the sharing platform can become an effective support for data resources.

4.4 To Improve supply chain financial risk management through financial technology

Supply chain financial risk management is not only a pure big data risk control, but also includes many risk control technologies with threshold. Therefore, the deep combination of technology and finance can make the risk management of supply chain finance even better. For example, block chain technology can be introduced into the supply chain because it has the technical characteristics that cannot be tampered with. The contract, invoice, logistics and other information recorded between suppliers at all levels are true and effective that can help commercial banks easily understand all links in the real trade, so as to make the assessment of financial risks in the supply chain more effective.

5. Conclusion

The financing mode of supply chain finance requires close cooperation, information sharing and benign interaction between financial institutions and participants in all links in the process of

business development. In particular, commercial banks and third-party logistics enterprises should establish an efficient linkage mechanism to closely connect various key points of risk control. The growth in the number of participating entities has led to a significant increase in the uncertainties faced by financial institutions. Due to the complexity of supply chain finance business and the frequent operation, commercial banks have not yet formed a complete risk control system, and the existing risk control measures can only control risks in general but still with many loopholes behind.

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