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Research on the Risks and Prevention Measures of Supply Chain Financial Business in Logistics Enterprises

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Abstract: With the development of IT, finance and production models, transformation has seen in supply chain financial business. As a provider of cargo, information and capital, logistics enterprises play an increasingly prominent role in the entire supply chain finance. Supply chain financial business in China is still in its infancy with some deficiencies, posing a relatively high risk to logistics industry. Therefore, starting with the overview of the risks of supply chain finance in logistics enterprises and focusing on their main financial risks, the research builds a visualized risk identification and prevention mechanism. In this connection, the research can give guidance to the enterprises on how to prevent and avoid risks and provide a scientific basis for the development of financial business so as to gain a wider application.

1. Introduction

Through the analysis of relevant documents, the author finds that the current researches on supply chain finance mainly focus on the study of a certain link or a certain content in supply chain financial services while lacking effective assessment of risks and researches on the prevention measures for logistics enterprises in the whole services.[1] Despite few researches on risk warning strategies, all links of supply chain finance are not fully involved. Moreover, such research has not brought guidance to logistics enterprises.[2] As such, built on previous studies, the research will use a highly recognized visualization theory to construct a risk prevention mechanism for supply chain based on visualization and innovate the mechanism as part of its efforts to provide guidance for the future supply chain business in logistics enterprises.

2. An Overview of the Main Risks of Logistics Supply Chain Finance

Risks also exist in logistics enterprises when they work on supply chain financial business. The risks have four forms: corporate credit risk, operational risk, market risk and legal risk.

2.1. Corporate Credit Risk

The corporate credit risk is what the supply chain financing model led by logistics enterprises must face first. It refers to a risk arising from the credit problems of core enterprises or upstream and downstream SMEs in their cooperation with banks.[3] Supply chain financial business mainly serves these enterprises on the supply chain and greatest financial interests are usually gathered in these enterprises, which mean that risks will also be relatively concentrated there.[4] Credit problems in these entities will definitely influence the entire business. [5] As a result, full control of the overall credit status of enterprises is essential to reducing potential risks in the financial business dominated by logistics enterprises.

2.2. Operational risk

Operational risk refers to the risk of losses caused by factors such as erroneous decisions, improper control and management mistakes arising from backward management, incomplete internal supervision, low-level informationization and poor quality of employees in logistics enterprises during the financial business. For example, the improper operation of inbound and outbound processes, regulatory issues on inventory and quality or counterfeit will cause losses to logistics enterprises in the pledge and supervision of goods,

2.3. Market Risk

Market risk refers to the potential risk of value losses in the financial market due to changes in market conditions. [6] The market risk faced by logistics enterprises in the supply chain financial business represents the risk brought by the situation where the market value of the products used by the customers for mortgages is lower than the authorized value due to changing prices. For example, on account of the changing market, the value-preserving ability of the pledges provided by SMEs makes their value lower than that of the guaranteed debt and commercial banks usually transfer the risk to the regulatory logistics enterprises during the supply chain financial business, thereby bringing great risks to logistics enterprises.

2.4. Legal Risk

Logistics enterprises should abide by relevant laws, regulations and commercial principles in the financial business. However, supply chain finance, as a new financing model, is still in its development stage. There are no relevant laws to clarify the rights, responsibilities and obligations of logistics enterprises in this aspect. [7] For example, once contract disputes and business risks appear in logistics enterprises, commercial banks and supply chain SMEs, the clear definition of the rights, obligations and responsibilities of these entities will be difficult, which is easy to trigger great losses to logistics enterprises whenever there is a contract dispute.

3. Risk Prevention Mechanism for Logistics Supply Chain Finance Based on Visualization

The concept of visualization derives from the computer field. Visualization management is a scientific management model. Based on visual and intuitive images and guided by openness and transparency, the model tries to make the demands and intentions of managers known to everyone through self-management and self-control so as to improve efficiency. For logistics enterprises, the visualized prevention aims to make their management more intuitive and transparent, quickly visualizes the entire process of supply chain finance and node status and helps logistics managers to identify problems promptly.[8] For that reason, problems are solved and management methods are improved in a targeted approach, ultimately making possible the effective control of the overall process.

3.1. Specific Steps for the Visualized Prevention of Logistics Enterprises

Based on the maximum transparency of information, visualization prevention of supply chain finance in logistics enterprises monitors the existing or potential problems and coordinates the division of responsibilities of nodes on the supply chain in order to reduce risks and maximize the benefits of the chain. Visualization prevention includes four steps: transparent layer, monitoring layer, active coordination layer and collaborative layer.

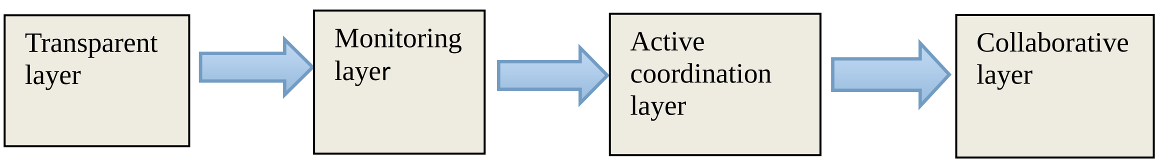

Figure 1 Steps for the Visualized Prevention

Transparent layer: aiming to make management and control system transparent and achieve improvements through an in-depth analysis and comprehensive understanding of the system.

Monitoring layer: aiming to correctly determine the content and time of monitoring through the real-time monitoring of key data and indicators in the development of the system.

Active coordination Layer: aiming to promptly return the system that has deviated from normal orbit or expectations to its original state by quickly finding out the cause and solution for the problem.

Collaborative layer: aiming to make the system more capable and its operation more productive by coordinating the cooperation between the system in complex management networks and external factors.

3.2. Risk Prevention of Supply Chain Finance Based on Visualization

By means of information and other technologies, visualized prevention puts each link of the supply chain financial business under visualized supervision and makes relevant information such as cargo inventory intuitive and transparent so as to reduce potential risks. Specific risk prevention processes are shown in Figure 2:

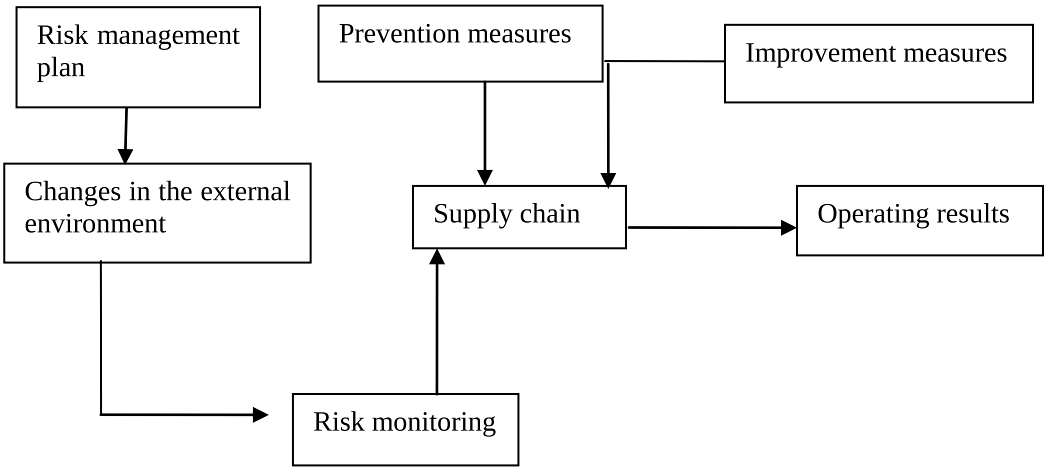

Figure 2 Flow Chart on the Risk Prevention of Supply Chain Finance Based on Visualization

As shown in Figure 2, visualized prevention can clearly show the risk faced by the supply chain financial business. First, measures of risk control and prevention must be taken before the business, risk monitoring and control must be implemented during the business and targeted enhancement measures must be set forth when there are accidents in the business. The visualized prevention mechanism will keep stable and conduct risk prevention and control throughout the business. The mechanism can clearly identify the risks at four stages including planning, designing, implementing and ending during the financial business of logistics enterprises and adopt proper measures for risk control to minimize the losses.

3.2.1 Visualized Risk Prevention at the Project Planning Stage

Due to the uncertainty in new projects planning, planning stage is a stage with biggest potential risks in the development of projects. Therefore, researches on the risks at this stage have a critical impact on the whole business. First, the risk control at this stage should be implemented in accordance with the processes of visualized prevention mechanism.

Table 1 Visualized Risk Prevention at the Planning Stage of Project

No.	Layer	Purpose	Method
1	Transparent layer	Strengthening the risk analysis and the predication of future development	Analyzing the overall external environmental risks at the current stage and a certain stage in the future
2	Monitoring layer	Assessing the risks posed by the market share and market capacity of new business on the supply chain	Focusing on market trends and the introduction of new policies, regulations and systems
3	Active coordination layer	Avoiding the impact of large environmental risks on the normal operation of the project	Analyzing the results of market risk, policy risk and legal risk
4	Collaborative layer	Laying a foundation for the implementation of project	Analyzing credit risk and management level of enterprises related to the projects of supply chain finance

3.2.2 Visualized Risk Prevention at the Project Designing Stage

Despite the analysis of external environmental risks at the project designing stage, risks still exist because of the rapidly changing market. Meanwhile, product R&D, establishment of management systems and initial financing also increase the risk categories at this stage. Consequently, risk prevention should be conducted at this stage in line with the processes of visualized prevention mechanism.

Table 2 Visualized Risk Prevention at the Designing Stage of Project

No.	Layer	Purpose	Method
1	Transparent layer	Ensuring the risks are minimized during the project	Identifying and evaluating the risks in management system, personnel training, safety supervision and information transmission
2	Monitoring layer	Judging the position and status of logistics enterprises on the supply chain	Strengthening the monitoring of changes in external environmental risks before the implementation of project
3	Active coordination layer	Making better preparations before the implementation of project	Formulating management system and personnel training plan, improving the safety supervision mechanism and planning the information transmission methods
4	Collaborative layer	Reducing such risks as joint liability	Assessing the differences in the risks of each entity, making agreements on risk pricing and business terms after the implementation of project

3.2.3 Visualized Risk Prevention at the Implementing Stage of Project

R&D and promotion of products are carried out at the implementing stage of project. Generally speaking, the total input may be higher than the return value. Hence, the overall categories and types of risk of the supply chain will also increase.

Table 3 Visualized Risk Prevention at the Implementing Stage of Project

No.	Layer	Purpose	Method
1	Transparent layer	Providing decisions for risk prevention and control	Visualizing the links and contents of the risks of management system, management level, logistics service outsourcing, customer credit and warehouse receipts
2	Monitoring layer	Ensuring the smooth operation of the entire supply chain	Examining the information of capital flow, information flow and logistics
3	Active coordination layer	Improving the competitiveness of the overall supply chain	Setting minimum thresholds for corporate credit qualification and management level and strengthening the management of logistics enterprises
4	Collaborative layer	Maintaining the overall stability of the chain	Expanding business, formulating cooperation agreements and legal contracts and strengthening the building of information platforms

3.2.4 Visualized Risk Prevention at the Ending Stage of Project

The ending stage of project means products have entered a mature stage. This stage shows that a basic and smooth communication channel regarding capital flow, information flow and logistics has been established in logistics enterprises, core enterprises and upstream and downstream enterprises on the supply chain. As core enterprises become increasingly prominent on the chain, they are likely to raise unreasonable demands for cooperation, thus increasing their own moral hazard.

Table 4 Visualized Risk Prevention at the Ending Stage of Project

No.	Layer	Purpose	Method
1	Transparent layer	Examining corporate risks and operational risks	Strengthening the analysis of risks in core enterprises and daily work
2	Monitoring layer	Providing decisions for corporate moral hazard and particular operational risks in emergencies	Establishing an internal monitoring mechanism within the enterprises
3	Active coordination layer	Eliminating risks caused by internal management loopholes and irregular operations	Establishing internal warning and emergency response mechanisms, building teams for risk prevention and control and regulating corporate behaviors through legal contracts
4	Collaborative layer	Making reasonable and effective decisions based on market researches and the development of enterprises	Fully monitoring all links of supply chain financial business in real time and promptly detecting the potential problems in management or production

4. Conclusion

The new business model provided by supply chain finance is not only a new opportunity but also a challenge for the development of logistics enterprises. On the one hand, logistics enterprises serve as a regulator in supply chain finance. On the other hand, they face credit risk, operational risk, market risk and legal risk when carrying out supply chain financial business. The paper summarizes the connotation and types of financial risks in logistics supply chain, analyze the potential risks of various links in the financial business of logistics enterprises and proposes a prevention mechanism on the basis of the visualization theory. In this way, it can help logistics enterprises at different development stages adopt appropriate measures to prevent or avoid risks, thus enabling these enterprises to reduce costs and improve efficiency. The research focuses on the risks and prevention measures for the supply chain financial business of logistics enterprises by consulting relevant materials and conducting some researches. However, deficiencies still remain. The research only constructs the prevention process as the risk prevention of visualized management methods, lacking an in-depth study of visualized management at different stages. Further improvement is still needed.

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