

Supply Chain Risk Management and Credit Assurance for Enterprises in Extreme Weather

Rongrong Zhu

Nanjing Rongmei Maternal and Infant Products Sales Co., Ltd., Nanjing, 211800

Abstract: In the context of global climate change, the incidence of extreme weather events has increased, posing numerous challenges to enterprise supply chains. This article analyzes strategies for supply chain risk management in extreme weather and the role of credit assurance within this framework. The aim is to provide a reference for enterprises to maintain supply chain stability under extreme weather conditions.

Keywords: Extreme weather; Enterprises; Supply chain risk management; Credit assurance

Introduction

Strengthening supply chain risk management under extreme weather conditions enables enterprises to better address supply chain risks, enhancing their competitiveness and response capabilities. Credit assurance is a core support for enterprise operations, and its effective application in supply chain risk management can ensure supply chain stability and promote the robust functioning of the credit system. Therefore, exploring strategies for supply chain risk management and credit assurance under extreme weather conditions is crucial for improving the level of supply chain risk management in enterprises.

1. The Importance of Supply Chain Risk Management and Credit Assurance for Enterprises in Extreme Weather

In extreme weather conditions, enhancing supply chain risk management for enterprises is beneficial for improving the continuity of the supply chain. During events such as droughts, floods, and heavy rains, production facilities may be damaged and transportation may be disrupted, affecting the stability of the supply chain. Effective supply chain risk management allows enterprises to accurately predict and respond to risks, ensuring the stability and continuity of the supply chain. Supply chain disruptions can result in significant economic losses for enterprises, including delayed orders, production stoppages, and shortages of raw materials. By implementing effective risk management measures, enterprises can reduce potential economic losses and ensure stable operations. In a competitive market environment, strong supply capabilities can enhance an enterprise's core competitiveness in the market. Strengthening supply chain risk management can increase the flexibility and resilience of the enterprise's supply chain, allowing it to better respond to market changes and external shocks such as extreme weather. Moreover, maintaining supply chain credit can preserve the enterprise's reputation, promote supply chain cooperation, and reduce transaction costs.).

2. Supply Chain Risk Management for Enterprises in Extreme Weather

2.1 Risk Identification and Assessment

In extreme weather conditions, supply chains may face risks such as demand fluctuations, limited supply capabilities, and logistics disruptions. Enterprises must comprehensively analyze the key links of the supply chain and evaluate the degree and impact of potential risks in these links under extreme weather. This ensures the stability and security of the supply chain.

To identify supply chain risks, enterprises can use scenario analysis, flowcharts, and expert interviews to identify and determine risks and predict possible future risk scenarios. This approach helps in precisely identifying potential risk points and formulating targeted strategies. By mapping out each link of the supply chain into a flowchart, enterprises can accurately identify risk factors at each step, clearly present risk points, and locate the sources of risk for flexible response and avoidance.

In risk assessment, staff can quantify the likelihood of risks occurring and their potential impacts, using a matrix to clearly visualize the priority of different risks. This helps in developing feasible risk response measures. Additionally, analyzing the impact of various factors on the supply chain, particularly their sensitivity to extreme weather, allows enterprises to identify the most significant factors affecting the supply chain and formulate practical risk prevention measures.

For example, in managing supply chain risks under extreme weather such as floods, an electronics manufacturer's factory was severely affected by a flood, disrupting the supply chain. In the risk identification phase, the company used flowcharts and scenario analysis to accurately identify risk points related to suppliers, inventory, and transportation. In the risk assessment phase, the company used a probability-impact matrix to determine that the risk of supplier disruption was high and had a significant impact, making it the most critical risk point in the supply chain. Therefore, the company adopted a diversified supply chain strategy to reduce dependence on a single supplier, enhanced cooperation with alternative suppliers, and effectively increased inventory levels to better handle transportation disruptions (Zhu Tian, 2023).

2.2 Diversified Supply Chain Strategy

In extreme weather conditions, an effective measure for enterprises to reduce risks is to adopt a diversified supply chain strategy. Enterprises can strengthen partnerships with multiple suppliers to ensure a stable supply of materials even if one supplier is affected by extreme weather. Additionally, setting up production bases in different geographical locations can mitigate the impact of regional weather disasters on the supply chain. When one region is affected by extreme weather, other production bases can quickly compensate for the lost capacity, ensuring normal operations.

Moreover, enterprises should establish a flexible transportation network that includes various modes of transportation such as air, water, rail, and road. This allows for alternative routes if one transportation path is disrupted by extreme weather, ensuring the continuity of the supply chain.

For example, an enterprise created a diversified supply chain system globally, strengthening cooperation with suppliers from various regions. Even if suppliers in one area are affected by extreme weather, the enterprise can still obtain the necessary parts and materials from suppliers in other regions. The enterprise also set up production bases in multiple locations to ensure rapid capacity replenishment. Additionally, it established a diversified transportation network, enabling quick adjustments to transportation plans and alternative routes in case of disruptions. By implementing a diversified supply chain strategy, the enterprise successfully reduced supply chain risks during extreme weather, ensuring normal product delivery and production.

2.3 Inventory Management and Stocking Strategy

To better predict and alert extreme weather, enterprises need to establish comprehensive weather forecasting and monitoring systems based on their actual circumstances. This will enable them to obtain timely weather information, including the likelihood and impact range of extreme weather events, allowing for early responses and reduction of potential risks.

In extreme weather, the supply chain might be significantly affected by disruptions in specific links. Therefore, enterprises should establish comprehensive and diversified supply chains to distribute production bases and mitigate supply chain risks. Building strong partnerships with multiple suppliers ensures the stability of raw material supply. Additionally, increasing inventory and setting up safety stock in advance, and adjusting inventory levels based on market demand and supply chain conditions, can prevent shortages or overstocking.

Moreover, it is crucial for enterprises to create flexible transportation and logistics networks to respond promptly to extreme weather events. When extreme weather occurs, enterprises can adjust logistics routes in a timely manner and choose the best transportation methods to prevent disruptions.

3. Ensuring Supply Chain Credit for Enterprises in Extreme Weather

3.1 Contracts and Agreements

During extreme weather, signing supply chain credit cooperation agreements can ensure the stability and security of the supply chain. Through interactive cooperation within the supply chain, enterprises can share resources and information, such as weather forecasts and supply chain status, to make timely adjustments and reduce the impact of extreme weather on the supply chain. Additionally, clear emergency plans should be established to collaboratively address risks like supply chain disruptions. This can minimize fixed losses during extreme weather and facilitate a quick return to normal operations.

Furthermore, signing supply chain agreements can clearly define the responsibilities and obligations of each party within the supply chain, ensuring that actions are taken according to the agreed terms even in extreme weather. These agreements can also specify the losses and risks each party must bear in such conditions, protecting the legal rights of the enterprises. When signing contracts or agreements, enterprises should establish stable and long-term relationships with logistics providers and suppliers, clearly outlining mutual responsibilities and obligations to face challenges together in extreme weather. Strengthening communication and collaboration, introducing third-party assurance mechanisms, and continuously optimizing the supply chain structure can enhance the resilience and flexibility of the supply chain.

3.2 Insurance Mechanism

Enterprises can reduce supply chain risks caused by extreme weather and other force majeure events by purchasing supply chain insur-

ance. An insurance mechanism can mitigate the losses incurred due to supply chain disruptions. For example, purchasing supply chain interruption insurance can cover economic losses resulting from transportation disruptions, limited raw material supply, and production line stoppages. Enterprises can choose appropriate insurance coverage and limits based on their needs.

3.3 Credit Rating and Assessment

Enterprises should establish a comprehensive credit rating system to regularly evaluate and monitor the credit status of logistics companies, suppliers, and other partners during extreme weather. A credit rating system enables enterprises to select stable and reliable partners, reducing supply chain risks. For instance, in the credit rating process, enterprises should analyze partners' performance during past extreme weather events, including their ability to deliver on time and maintain product quality.

4. Conclusion

In summary, exploring strategies for supply chain risk management and credit assurance for enterprises in extreme weather conditions holds significant practical value and importance. To better address the challenges posed by natural disasters, enterprises need to establish comprehensive supply chain risk management systems to ensure timely responses and minimize losses in emergency situations. Additionally, they must adopt various measures to maintain and enhance their credit. This will ensure the enterprises' core competitiveness in the market and promote sustainable development.

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About the author: Rongrong Zhu, Male, 1990.10.19, Yancheng City, Jiangsu Province, Postgraduate, Research direction: Business Management or Economics, Unit: Nanjing Rongmei Maternal and Infant Products Sales Co.Ltd., Title: General Manager