

A Review of Risk Management Research on Cross-border E-commerce in China in the Context of the COVID-19

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Abstract: The COVID-19 has continuously transformed the world situation, and the uncertainty and instability factors facing the development of China's foreign trade have increased significantly. The COVID-19 is a challenge and an opportunity for the cross-border e-commerce industry. The 14th Five-Year Plan for the High-Quality Development of Foreign Trade proposes to continuously improve the institutional mechanism for preventing and resolving major risks, and significantly enhance the emergency response capacity of public emergencies, which is an important guarantee for the survival and development of enterprises and the sustainable realization of value-added. Therefore, how to actively respond to the risks arising from dynamic environmental changes and improve the risk management system has become a key issue for cross-border e-commerce enterprises today. This paper compares the risks faced under the crossborder e-commerce in the context of the COVID-19, risk management evaluation methods and principles of risk management index system construction, as well as relevant literature on the relationship between dynamic capabilities and risk management, summarizes and refines the achievements and shortcomings of current research, and provides an outlook on future research directions, with a view to enriching existing research results and providing references for related research fields.

1. Introduction

The new normal after the *COVID-19* has overturned consumer psychology and behavior, and the complex and changing market environment has brought China's cross-border e-commerce industry to a new stage of development, with cross-border e-commerce becoming an important breakthrough in promoting the transformation and upgrading of foreign trade and consolidating external circulation. Based on this, favorable policies for the cross-border e-commerce industry have been introduced continuously under the COVID-19. In 2021, China's "14th Five-Year Plan" for e-commerce development emphasized that it advocates openness and win-win, supports cross-border e-commerce and overseas development, and comprehensively promotes the development of the cross-border e-commerce industry by encouraging cross-border e-commerce comprehensive pilot zones, standardizing the regulatory system and national-level trade cooperation.

After more than ten years at sea, for China's cross-border ecommerce, although it has taken shape and accumulated strong operational experience, but in the context of the COVID-19, it still faces new problems and new challenges. DaWei Zhang, vice president and secretary-general of the China Center for International Economic Exchanges, said that cross-border e-commerce is characterized by "small, scattered and chaotic", insufficient policy supply in customs clearance, tax rebates and foreign exchange settlement, the development environment needs to be further improved, the cross-border e-commerce industrial ecosystem is fragile, and some parts of the trading platform and international logistics are still subject to constraints. According to the "2021 Cross-border E-Commerce Development Report" of Ebrun among the real difficulties faced by cross-border ecommerce, rising logistics costs, unstable orders and poor overseas marketing effects are the top three problems due to the continued impact of the COVID-19. This shows that there are many risks that cannot be ignored in cross-border e-commerce.

Therefore, in order to ensure operational safety in the face of the new normal of the COVID-19, cross-border e-commerce enterprises must be aware of the importance of risk management. How to take the lead in seizing opportunities in the industry inflection point, actively respond to dynamic environmental changes, improve risk management systems, transform the inherent risk management approach and achieve sustainable development of operations will become a key issue for many cross-border e-commerce enterprises.

Accordingly, this paper analyzes and summarizes the relevant research on cross-border e-commerce and risk management in academia by combing existing literature from three aspects: (1) the risks faced by cross-border e-commerce under the COVID-19; (2) the evaluation methods and principles of risk management effectiveness and system construction; and (3) the relationship between dynamic capability and risk management, so as to explore the future research direction of risk management in crossborder e-commerce enterprises.

2. Risks Faced by Cross-border E-Commerce Enterprises under the COVID-19

As a result of the COVID-19, the endogenous risks such as financial risk, liquidity risk, operational risk and bankruptcy risk of crossborder e-merchants due to many uncertainties such as delayed foreign exchange collection and soaring logistics costs have increased significantly [1]. The financial vulnerability risk of small and medium-sized cross-border e-commerce enterprises is particularly evident, and industry reshuffling has accelerated.

2.1. Tight Cash Flow

Affected by foreign control of the COVID-19, Chinese cross-border e-commerce enterprises' order delivery cycle has been extended, and the capital return plan of each link has been disrupted, and the return is unstable. Firstly, the payment cannot be delivered on time, and the triangular debt situation among enterprises is serious [1]. Secondly, it is difficult to obtain financing in the short term and cannot make debt service payments on borrowed funds through operating cash flow [2]. Zhu Wuxiang et al. (2022) [3] found, based on a survey, that most enterprises affected by the COVID-19 wanted some government support. The policy demands of large-scale enterprises were mainly to provide liquidity support, while the policy demands of small-scale enterprises tended to reduce costs.

2.2. Logistics Costs Soar

Liu Yaqian (2022) [4] proposed that the potential risks faced by cross-border logistics services are diverse, including natural disasters, geopolitical conflicts, and customs clearance risks. Although

China's production order recovered quickly during the period of the COVID-19, the impact of the decline in international shipping capacity led to a surge in container shipping prices, and the phenomenon of "one container is hard to find" became the norm [5].

2.3. Marketing Ideas are too Narrow

Along with the intensified competition in the cross-border e-commerce industry, the reshuffle is getting faster and faster. However, some cross-border e-commerce enterprises in China still ignore the necessity of patterned operation, mainly in three aspects: weak market segmentation ability, fewer reach channels and market inclusion to be improved [6].

2.4. Increased Uncertainties

MSMEs face different degrees of problems in restarting and sustaining their operations after the COVID-19, and there is a risk of mass closures in the MSME population, which originally has a very high elimination and mortality rate [7]. Xiaoheng Zhang and Changjiang Sun (2021) [8] also point out that in order to protect their own firms affected by the COVID-19, governments increase trade protection for their own firms while imposing trade restrictions on other countries.

3. The Selection of Risk Management Effectiveness Evaluation Methods and Evaluation Index Construction Principles

By establishing a risk management index system and evaluating enterprise risk management using model analysis, we can not only effectively identify the specific problems of risk management within the enterprise, but also understand the connotation of a comprehensive risk management framework and sort out the global view of risk management in the process of index construction.

3.1. Risk Management Effectiveness Evaluation Methods

Factor analysis, entropy value method, neural network method, hierarchical analysis and fuzzy mathematical method are more commonly used in the evaluation of the effectiveness of enterprise risk management. Through the literature, two or more analytical methods are usually used in combination in domestic and international studies to improve the scientific validity of the model analysis method.

3.1.1. Multi-level Comprehensive Evaluation Combining Hierarchical Analysis and Fuzzy Evaluation Method

Wang Bo and Wang Jianling (2019) [9] and Chen S. Bing et al. (2008) [10] used hierarchical analysis and fuzzy evaluation method in risk evaluation, which properly dealt with the fuzzy problem by combining both qualitative and quantitative analysis, and improved the scientificity of decision making to some extent. However, the disadvantage of the fuzzy evaluation method is that its evaluation matrix obeys the principle of maximum subordination, and if there are many indicators, there are often problems with the same or extremely similar subordination, at which time only subjective experience can be used to judge.

3.1.2. Entropy-TOPSIS Analysis Method

Zhu Sijia and Qiu Wanhua (2020) [11] and Li Nan (2015) [12] used entropy weighting by-TOPSIS establishes a risk evaluation system that transforms the evaluation problem into a

multi-attribute decision problem, and makes optimal decisions by risk ranking. The entropy-TOPSIS method can avoid the disadvantages of subjective assignment method, is relatively easy to calculate, and has strong applicability with fewer restrictions in various aspects.

3.1.3 AHP-DEA Modeling Method

Yizhou Lu et al. (2019) [13] constructed a comprehensive evaluation framework for risk management performance using the AHP-DEA method. The evaluation framework achieves the integration and dimensionality reduction of multidimensional indicators with the help of the AHP method and provides effective inputs for the DEA model, while combining the risk management efficiency of the relevant evaluated units with the traditional risk evaluation scores, which can provide a comprehensive evaluation of the risk management performance of operating units. The DEA method requires linear and monotonic increasing characteristics of input-output indicators. The DEA method requires linear, monotonic increases in the input and output indicators. Scoring methods that convert too many raw values and do not reflect the increase in management workload and control effects should be used with caution when evaluating efficiency using the DEA method.

3.2 The Basis for the Construction of Risk Management Effectiveness Evaluation Index System

3.2.1. Based on Official Documents Issued by the Authorities in Their Field

For example, many studies have based their comprehensive evaluation of the operational risk management status of commercial banks primarily on the requirements of the Basel Committee on Banking's New Capital Accord [14,15]; for the construction of the compliance risk management system of commercial banks, the Basel Committee on Banking Supervision has mostly referred to the documents such as "Internal Compliance Department of Banks", "Compliance and Internal Compliance Department of Banks" [16] issued one after another, and China's CBRC has issued "Guidelines on Compliance Risk Management of Commercial Banks" on this basis to increase the effective identification of compliance risks, proactively avoid non-compliance events, and proactively take various measures to correct non-compliance [17].

3.2.2. Specific Indicators are Designed according to Industry or Business Characteristics

Gao Jianwei and Fang Yinjie (2018) [18] put forward in their research on the risk management level evaluation of the asset management business of commercial banks in China that the whole process of the asset management business of commercial banks mainly involves three levels: capital source, capital investment direction and business management. The risk management level of these three aspects can directly reflect the risk management level of the whole asset management business. Chen (2014) [14] combined with the actual situation of operational risk management of commercial banks in China, a comprehensive evaluation of the operational risk management status of commercial banks was selected by six categories of indicators: operational risk loss composition, commercial bank personnel status, etc., and each category of indicators in turn determined the corresponding specific indicators according to the actual situation.

3.2.3. According to the Framework Issued by Coso Committee for Risk Management

The current study for the internal control evaluation system commonly uses the 23 principles of COSO-ERMPE (2016) and several indicators required to be disclosed by the Basic Standard for Enterprise Internal Control in China for the construction of the indicator system [19] As for the

evaluation indicators of enterprise risk management, there is likewise a reference to the new version of COSO-ERM framework released by the COSO committee in 2017 for the construction of indicators. Li-Yan Zhang [20] has considered using the risk profile map provided by the COSOERM 2017 framework to integrate risk management with strategy and performance, suggesting that companies should establish a risk management performance assessment team with internal risk managers as the main focus and external risk management experts as a supplement.

4. Risk Management from a Dynamic Capability Perspective

Teece (2012) [21] defines dynamic capabilities as higher-order capabilities for firms to reconfigure internal and external resources, and its goal is to explain how firms are in a dynamically changing environment. Ji, Liang-Yu (2022) [22], on the other hand, in studying the evolution of dynamic capabilities, emphasizes that dynamic capabilities emphasize two aspects: firstly, the changing characteristics of the environment; and secondly, the functional capabilities and important role of strategic management in the face of environmental dynamism and the integration of internal and external resources of the firm.

More studies have identified risk management as an important part of the dynamic capabilities of an enterprise, and dynamic capability theory is a guide to action for improving risk management measures. Branco et al. (2019) [23] argue that risk management capability is a dynamic capability, and the stronger the risk management capability of an enterprise, the more resilient it is. Vanpoucke et al. (2014) [24] see dynamic capability theory as a key to action in dealing with complex project management and project risk management as a key to action.

Dynamic capabilities can enhance a firm's competitive advantage. It can create new resources or provide new solutions to problems, giving a competitive advantage to firms that are the first to initiate change in the competitive environment of international markets [25]. The dynamic and uncertain nature of the external environment has created a desire for dynamic capabilities [26], and Teece et al. [27] argue that in a market with a rapidly changing competitive landscape, the ability of a firm's managers to research, integrate, and build a variety of internal and external resources to respond to a rapidly changing environment is a source of sustained competitive advantage for the firm. For example, Zeng, Jianghong et al. (2020) [28] point out that the uncertain external environment can expose enterprises to financial crises at any time, and enterprises should have the ability to adjust their financial resources to adapt to environmental changes. Therefore, the enterprise's prediction of financial crisis plays a very important role in the dynamic environment.

5. Conclusion and Outlook

5.1 Conclusion

In this paper, by combing through the relevant literature, we find that (1) for cross-border e-commerce risk management, many literatures emphasize more on the prominence of risks in this industry and the urgency of increasing the attention to risk management. (2) The existing literature has a variety of evaluation methods for enterprise risk management, which are valuable for the study of constructing an evaluation of the effectiveness of enterprise risk management. Each method has a certain scientific basis, but there are also shortcomings. (3) With regard to the construction of risk management evaluation index system, it can be seen from the literature that the existing studies are more inclined to determine whether the risk management is effective from whether the research subject has effectively identified the risks, so as to raise problems and give suggestions to solve them.

5.2 Outlook

In conjunction with existing research, further concerns could be:

First of all, the identification and evaluation of risk management is studied from a global perspective. According to COSO-ERM (2017), enterprise risk management does not only include risk identification operations, but includes risk management strategy formulation, organizational structure, application procedures, and so on. Risk management practice should not be limited to the business execution of the enterprise, but should rise to the level of the enterprise as a whole. Put the integration of risk management into the strategy formulation and selection of the enterprise is the new trend in the development of risk management applicability.

Second, the dynamic adjustment of risk management is driven by the dynamic nature of the environment. The market environment is in a state of constant dynamic change, and companies have to rely on dynamic competitiveness and innovation, and dynamic capabilities can help them develop past competitive advantages. Risk management is an important part of dynamic capabilities, and enterprise risk management also needs to have dynamic capabilities to adapt to environmental change requirements by adjusting, integrating and reconfiguring enterprise resources. Therefore, it is very meaningful to study enterprise risk management from the perspective of dynamic capability theory.

Third, the new situation of China's COVID-19 prevention and control will push cross-border e-commerce to a new climax. With the continuous implementation of optimized measures for the COVID-19 prevention and control and the gradual release of the effects of various policies to stabilize the economy, China's economic growth rate is expected to continue to pick up. With the emergence of the offshore business boom and the new business model of import and export cross-border e-commerce, it is worthwhile to follow up and study how China's cross-border e-commerce will further improve its risk management system and achieve high-quality development in the future.

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