

# Foreign Exchange Risk Management: Chinese Cross-Border E-Commerce Enterprises

Yihong Cheng \*

International Economics and Trade Faculty of Nanjing University Business School, Nanjing University, Nanjing, Jiangsu, 210033, China

\* Corresponding Author Email: 221098142@smail.nju.edu.cn

**Abstract.** Cross-border e-commerce has emerged as a critical driver of China's participation in global digital trade, but its rapid expansion exposes enterprises to significant foreign exchange (FX) risks. However, the understanding of its FX risk exposure remains fragmented, often overlooking the interplay between macro-institutions, market infrastructures, and firm-level capabilities. This study investigates the sources, mechanisms, and strategies of FX risk management within this sector. Using China's trade data as a case background, the research identifies three primary dimensions of risk: the external tariff and policy environment, the cross-border payment and settlement system, and enterprise-level financing and governance. The analysis highlights how policy volatility, reliance on third-party platforms, and firm-level capacity constraints shape the sector's vulnerabilities. Based on these findings, the study proposes a multi-tiered framework. To address these vulnerabilities, this study proposes an integrated risk management framework that synergizes macro-level policy support, meso-level payment system optimization, and micro-level enterprise capacity building. Together, these measures can shift FX risk management from a defensive posture to a strategic capability. This research underscores the business value of strengthening profitability and competitiveness for Chinese enterprises while also contributing to the broader stability of China's foreign trade and digital economy.

**Keywords:** Foreign Exchange Risk; Cross-Border E-Commerce; Risk Management Framework; Financial Resilience; Digital Trade.

## 1. Introduction

Foreign exchange (FX) risk, also referred to as foreign exchange exposure, refers to the possibility that fluctuations in exchange rates may lead to changes in a firm's profitability, net cash flow, and market value. In business operations, risk is unavoidable, and among all types, foreign exchange risk is the most frequent, direct, and significant. It greatly increases the uncertainty in assessing future operating performance and cash flows. Foreign exchange risk typically includes transaction risk, translation risk, and economic risk, each exerting varying degrees of negative influence on both the short-term profitability and the long-term growth of enterprises.

In recent years, with the rise of global digital trade and the disruption of traditional trade patterns caused by the COVID-19 pandemic, cross-border e-commerce (CBEC) has rapidly developed as a new mode of international trade and has become an integral part of global commerce. According to relevant statistics, in 2024, the global cross-border e-commerce retail transaction volume reached approximately 1.9 trillion USD, accounting for around 22-23% of global e-commerce retail sales, and is expected to exceed 3 trillion USD by 2028 [1].

This hyper-growth, however, is intrinsically linked to heightened exposure to global currency volatilities, making foreign exchange risk management not merely a financial function but a core strategic imperative. While the vigorous expansion of cross-border e-commerce has created new opportunities for internationalization, it has also exposed enterprises to more complex foreign exchange risks. Therefore, studying foreign exchange risk management in cross-border e-commerce enterprises holds significant practical importance: it not only facilitates stable and sustainable business operations but also contributes to optimizing national trade structures and promoting high-quality economic development. Existing literature provides a foundational understanding of the cross-border e-commerce landscape and foreign exchange risk management in traditional firms.

Research on cross-border e-commerce has identified both structural challenges and opportunities. The sector still faces constraints in marketing, logistics, taxation, and payment systems [2]. At the same time, digitalization has reshaped cost structures by reducing distance-related trade costs, though language barriers remain, and improvements in payment systems can significantly stimulate trade flows [3]. Besides, the application of big data has become increasingly imperative, enabling firms to analyze consumer behavior, optimize logistics, and strengthen talent development, thereby enhancing competitiveness [4]. Recent studies also emphasize heterogeneity: the use of social media varies across countries and differs between large firms and SMEs [5], and retailers in developed and emerging markets adopt distinct strategies, showing that markets cannot be treated as uniform [6].

In the field of foreign exchange risk management (FXRM), existing research has highlighted the diverse consequences of exchange rate volatility. At the corporate level, fluctuations in currency values are linked to higher audit fees and lower financial reporting quality in multinational corporations [7]. At the macroeconomic level, political instability reduces foreign exchange reserves in both the short and long term, reflecting greater demand for foreign currency during uncertain periods [8]. Geopolitical conflicts, exemplified by the Russia–Ukraine war, further magnify volatility, with the strongest adverse effects observed in economies heavily reliant on Russian energy [9]. Beyond these risks, scholars also emphasize the stabilizing role of effective FXRM, showing that well-designed practices can mitigate the impact of exchange rate uncertainty on corporate investment, and that this moderating effect holds in both static and dynamic investment contexts [10].

While prior research has examined cross-border e-commerce challenges and the broader impacts of foreign exchange volatility, it has largely focused on multinational corporations or macro-level dynamics, leaving a limited understanding of how Chinese cross-border e-commerce enterprises manage currency risks within their unique trade structures, payment systems, and policy environments. To address this gap, this study investigates the main sources of foreign exchange risk in such enterprises, evaluates the applicability of common risk management tools, and explores how policy and digital developments shape their effectiveness, with the aim of proposing a more context-specific framework that enhances resilience in a volatile global market.

## 2. Case Description

The scale and structure of China's cross-border e-commerce trade provide a critical context for understanding the magnitude and specificity of the foreign exchange risks faced by enterprises in this sector. Cross-border e-commerce has solidified its role as a strategic pillar and a pivotal growth engine driving China's economic development. According to data released by China Customs, the total value of China's cross-border e-commerce imports and exports reached approximately RMB 2.71 trillion in 2024, marking a year-on-year increase of 14%. This growth rate outpaced that of China's overall goods trade by 9 percentage points, with cross-border e-commerce accounting for 6.2% of the nation's total merchandise trade. Specifically, exports amounted to around RMB 2.15 trillion, representing a 16.9% increase year-on-year and accounting for 8.5% of total goods exports. The principal export destinations were the United States (36.2%) (primarily USD), the United Kingdom (11.7%) (primarily GBP), and Germany (5.7%) (primarily EUR). Imports stood at RMB 555.25 billion, an increase of 4.1% compared with the previous year, constituting 3% of total goods imports, with the main sources being the United States (15.8%), Japan (10.5%), and Germany (9.8%) [11]. This trade structure—characterized by a large export surplus and concentration in a few key Western currencies—immediately exposes enterprises to significant transaction risk (from settlement delays) and translational risk (on foreign currency-denominated assets).

**Table 1.** Situation of Cross-border E-commerce Imports and Exports, 2018–2024 [12]

Year	Amount (100 mln CNY)			YoY Growth (%)			Export–Import Ratio
	Total	Exports	Imports	Total	Exports	Imports	
2018	10,557	6,116	4,441	–	–	–	1.4
2019	12,903	7,981	4,922	22.2	30.5	10.8	1.6
2020	16,220	10,850	5,370	25.7	35.9	9.1	2.0
2021	19,237	13,918	5,319	18.6	28.3	–0.9	2.6
2022	20,599	15,321	5,278	7.1	10.1	–0.8	2.9
2023	23,744	18,409	5,335	15.3	20.2	1.1	3.5
2024	27,072	21,520	5,552	14.0	16.9	4.1	3.9

(Source: General Administration of Customs of China (GACC))

While this substantial trade surplus underscores the competitiveness of China’s cross-border e-commerce sector, it also inevitably gives rise to significant foreign exchange risk exposure, thereby introducing considerable uncertainty into the trajectory of economic growth. Consequently, investigating the mechanisms and practices of foreign exchange risk management within cross-border e-commerce enterprises has thus become an issue of critical practical and strategic importance. Effective risk management not only ensures the stable and sustainable profitability of such firms but also contributes to the resilience and long-term stability of China’s foreign trade and broader economic development.

### 3. Factor Identified Analysis

Building on the structural characteristics of China’s cross-border e-commerce trade outlined in the previous section, this part further dissects the drivers of foreign exchange risk. The exposure of cross-border e-commerce enterprises is not monolithic; rather, it emerges from a confluence of external macro-environmental conditions, industry-specific operational mechanisms, and internal firm-level capacities. This section analyzes three critical dimensions: the policy landscape, the cross-border payment and settlement system, and enterprise-level financing and management practices.

#### 3.1. Tariff and Policy Environment

Tariffs and regulatory policies form the outer framework shaping foreign exchange risk for cross-border e-commerce enterprises. Internationally, customs duties, technical trade barriers, and value-added tax regimes directly influence the inflow and outflow of foreign currency. For example, heightened scrutiny from the EU and the U.S. on CBEC transactions raises compliance costs and narrows the pricing margin. Domestically, China’s export rebate policies and cross-border e-commerce pilot zones provide partial buffers, yet these supports are unevenly distributed across firms and industries.

From a financial management perspective, policy volatility translates into fluctuating expectations of cash flow denominated in foreign currencies. Firms must not only react to tariff shifts but also anticipate how policy changes interact with exchange rate cycles. This underlines the importance of embedding policy risk assessment into foreign exchange risk models, rather than treating tariffs as an isolated external factor.

#### 3.2. Cross-Border Payment and Settlement System

The cross-border payment and settlement system is a direct source of foreign exchange risk for e-commerce enterprises. Many firms rely heavily on third-party platforms such as PayPal, Alipay Global, and WorldFirst, which have the power to decide or influence currencies and timelines. Although these platforms lower barriers to global markets and provide convenient access to international payment channels, they create inevitable risk. Settlement delays, conversion fees, and unfavorable exchange rates can all increase foreign exchange exposure.

The use of multiple settlement systems makes it more complex. Many firms accept diverse currencies for better customer experience and pricing, causing reliance on payment gateways. This forces them to manage multiple foreign currency accounts at the same time. Without centralized control and real-time monitoring, funds become scattered, which means higher risks of exchange losses and added compliance costs for the firms. It's a dilemma that enterprises need to maintain more offerings of local currency payment for customers and less exposure at the same time. Balancing these two needs has become a crucial challenge for cross-border e-commerce firms.

### **3.3. Financing Capacity and Enterprise Management**

The size of an enterprise remarkably influences its management level of exchange rate risk. Large platforms such as Shein, Temu, and TikTok Shop have significant advantages, for they can access multiple financing channels and employ skilled treasury teams. They can use diverse hedging instruments such as futures and swaps without too much burden. They can also negotiate favorable terms with financial institutions. These firms integrate compliance systems and digital monitoring into their operations. As a result, they follow proactive strategies that make risk management part of their global expansion.

Most SMEs, however, face different conditions. They lack capital reserves and professional expertise. Many rely on simple methods, such as short-term pricing adjustments or instant settlement offered by third-party platforms. These tools give partial protection but leave firms exposed to sharp currency swings. This creates a dual structure in the industry. Leading platforms show that advanced risk management is possible. Most SMEs, however, remain stuck with defensive approaches.

The analysis above highlights three major sources of risk: the policy and tariff environment, the payment and settlement system, and enterprise-level financing and management. The next section presents targeted recommendations that respond to these three dimensions. Together, they form a multi-layered framework to strengthen resilience against currency volatility.

## **4. Suggestions**

The analysis above demonstrates that a complex interplay of external institutions, market infrastructures, and firm-level capacities shapes foreign exchange risk in China's cross-border e-commerce sector. To strengthen resilience, recommendations must be tailored to these three dimensions while fostering synergies among them.

### **4.1. Optimizing the Cross-border Payment and Settlement System**

As identified in the analysis, the heavy reliance on third-party platforms and the complexity of multi-currency management are primary sources of FX risk. Therefore, optimizing the payment infrastructure is the first step toward resilience. The second dimension relates to the infrastructures through which firms execute international transactions. Excessive dependence on single-currency platforms or intermediaries leaves firms vulnerable to conversion costs and market volatility. Research on manufacturing firms shows that natural hedging through aligning import costs and export revenues in the same currency can effectively reduce reliance on financial derivatives and stabilize cash flows [13]. Cross-border e-commerce companies could adopt similar strategies by negotiating contracts with overseas suppliers and customers in shared currencies. Complementing this operational approach, firms should also adopt quantitative risk assessment tools such as Value-at-Risk (VaR) and stress testing to set transaction limits and identify potential losses under extreme scenarios [14]. Industry associations and payment platforms could further institutionalize these practices by offering standardized VaR-based monitoring systems to SMEs. Together, these measures would strengthen the resilience of the payment ecosystem, balancing efficiency with robust risk control.

## 4.2. Strengthening the Policy and Institutional Framework

At the macro level, government agencies play a pivotal role in reducing systemic uncertainty and shaping the conditions under which enterprises manage FX risks. To mitigate the systemic uncertainties and policy-driven risks faced by enterprises, a key priority is the establishment of risk-sharing mechanisms between the public and private sectors [12]. Evidence from infrastructure projects in emerging economies indicates that when governments provide partial guarantees or insurance against severe currency depreciation, investor confidence improves while excessive fiscal exposure is avoided. Applied to cross-border e-commerce, such mechanisms could take the form of targeted insurance schemes or exchange rate stabilization funds that cover a fraction of losses beyond a pre-specified threshold. In parallel, authorities should continue to promote local currency settlement in bilateral trade and strengthen early-warning systems for currency volatility. These steps would not only stabilize the external environment but also enable enterprises to adopt more proactive and forward-looking risk management practices.

## 4.3. Enhancing Firm-level Financial Capacity and Governance

At the firm level, the ability to mobilize financial tools and internal expertise is decisive in mitigating exposure. One effective approach is the strategic use of derivatives such as forwards, swaps, and options to stabilize cash flows and ease financing constraints, as demonstrated in Latin American firms [15]. For e-commerce exporters, deploying a carefully designed hedging portfolio can reduce the cost of capital and support access to external financing. However, the success of such strategies depends heavily on organizational capabilities. Studies on SMEs emphasize the importance of organizational and human resources to strengthen the internal capacity of using hedging instruments effectively [16]. Building specialized teams, enhancing financial literacy among managers, and institutionalizing risk management routines can transform the action of FX hedging from a reactive tool to a core competency. For SMEs with limited resources, industry alliances and shared service platforms could pool demand for hedging services and reduce transaction costs, thus complementing these efforts.

At the system level, the three dimensions—policy frameworks, settlement systems, and enterprise financing—are not isolated but linked to each other tightly. Public–private partnerships that share risks make enterprise-level hedging more feasible. Operational strategies such as natural hedging reduce firms’ dependence on derivatives, which cost a lot, and quantitative tools like Value-at-Risk (VaR) models provide clear information on exposure, thus benefiting related decision-making. Meanwhile, organizational capacity can connect all components, ensuring that available instruments and institutions are arranged effectively.

Taken together, these measures suggest an integrated, multi-tiered framework. At the macro level, supportive policies reduce structural frictions; at the meso level, payment and settlement infrastructures can be optimized for efficiency and transparency; and at the micro level, enterprises build internal resilience through knowledge, systems, and practices. For Chinese cross-border e-commerce enterprises, adopting such a layered approach repositions FX risk management—not merely as a defensive mechanism—but as a strategic enabler of sustainable international expansion.

## 5. Conclusion

The ability to manage foreign exchange risk has become a key factor in the competitiveness of cross-border e-commerce companies as the pace of global digital trade increases. This review examines the firm-level economic and executive power disparities, the volatility of tariff and policy regimes, and reliance on cross-border payment and settlement platforms. It examines the comprehensive nature of FX risk in Taiwanese CBEC companies. These hazards are intertwined, reflecting how external shocks, economic structures, and corporate resilience interact.

The study develops a multi-tiered platform for mitigation in reply. Governments can promote endurance at the macro level by implementing risk-sharing strategies, expanding local money

settlement programs, and improving early-warning methods for currency fluctuations. Firms are consistently advised to adjust transaction structures and adopt healthy hedging practices at the micro level. Additionally, quantitative tools like Value-at-Risk (VaR) and stress testing are recommended to monitor exposures consistently. Enterprises could increase domestic capacity at the microscopic level by promoting financial literacy, developing specialist expertise, and strategically deploying derivatives and other hedging instruments. This included habitat transforms FX risk management from a silent guard to a strategic profitability driver that emerges from these layers.

The studies have both social and business implications. Powerful FX risk management can help businesses, particularly SMEs, increase revenue and sustainably expand internationally. Becoming more resilient in this area, on a global level, aids in the long-term growth of the modern economy and the balance of China's overseas trade. This study supports the transition of cross-border e-commerce from rapid growth to high-quality, adaptable industrialization by handling structural flaws.

Although this framework provides a complete strategy, its development opens up several potential research areas. Due to the limitations of being able to capture firm-level practices in real time, the analysis largely relies on supplementary data and existing situation evidence. To improve understanding of business behavior and assess the viability of presented measures in practice, potential research might include key data gathering, such as interviews or surveys with managers and policymakers. Expanding factual assessment across various industries and regions may improve the framework's generalizability and reveal more subtle insights into FX risk management in the changing global digital trade landscape. In the end, developing this knowledge is necessary to create a more stable and equitable global online trading method.

## References

- [1] Statista, Cross-border e-commerce sales worldwide from 2019 to 2028, 2024. [Online]. Available: <https://www.statista.com>
- [2] Saydam, Safiye Gizem, and Mustafa Emre Civelek. Problems in Cross-Border E-Commerce and Development of Cross-Border E-Commerce Performance Scale, *Journal of international trade logistics and law*, 2022, 8(1): 133, 2022.
- [3] Gomez-Herrera, Estrella, Bertin Martens, and Geomina Turlea. The drivers and impediments for cross-border e-commerce in the EU, *Information Economics and Policy*, 2014, 28(1): 83–96.
- [4] Chen Guofang. The development dilemma and countermeasures of Chinese cross-border e-commerce enterprises under the background of big data, *Journal of computational methods in sciences and engineering*, 2023, 23(2): 1087–1099.
- [5] Knösel, Cosima Tabea, Colin CJ Cheng, and Eric C. Shiu. Exploring Social Media Use in Cross-Border E-Commerce and the Internationalization Process: A Comparative Study of Cross-Country and Firm Size, *Thunderbird international business review*, 2025, 67(2): 257–283.
- [6] Goldman, Sjoukje PK, van Herk, T. Verhagen, and J. W. Weltevreden. Strategic orientations and digital marketing tactics in cross-border e-commerce: Comparing developed and emerging markets,” *International small business journal*, 2021, 39(4): 350-371.
- [7] Chang Yuyuan, Fan Yangyang, and Su Nancy Lixin. Foreign exchange risk and audit pricing: Evidence from U.S. multinational corporations, *Journal of accounting and public policy*, 2024, 45: 107196.
- [8] Arthur Benedict, S. Mafika, K. B. Tutu, and A. M. Selase. The effects of political risk on foreign exchange demand: Evidence from Zimbabwe, *Cogent economics & finance*, 2022, 10(1): 2111806.
- [9] Hossain Ashrafee, A.-A. Masum, and S. Saadi. The impact of geopolitical risks on foreign exchange markets: Evidence from the Russia–Ukraine war, *Finance research letters*, 2024, 59: 104750.
- [10] Ko Deokki, and Wonho Cho. Foreign Exchange Risk Management and Corporate Investment in South Korea, *Global economic review*, 2024, 53(4): 304–326, 2024.
- [11] General Administration of Customs of the People’s Republic of China, China’s Cross-border E-commerce Imports and Exports in 2024, Jun. 16, 2025. [Online]. Available: <http://search.customs.gov.cn/eportal/ui?pageId=7690f322e6a0410881e172afbfaaa25c>

- [12] Kuikel Badri, Yu Maemura, and Kazumasa Ozawa. Management of Foreign Exchange Risk for Build–Own–Operate–Transfer Hydropower Projects in Nepal: A Good-for-All Approach, *Journal of Infrastructure Systems*, 2023, 29(2): 05023002.
- [13] Aabo Tom, Esben Høg, and Jochen Kuhn. Integrated foreign exchange risk management: The role of import in medium-sized manufacturing firms, *Journal of multinational financial management*, 2010, 20(4): 235–250.
- [14] Al Janabi, Mazin AM. Foreign-exchange trading risk management with value at risk: Case analysis of the Moroccan market, *Journal of Risk Finance*, 2006, 7(3): 273–291.
- [15] Giraldo-Prieto, César Augusto, Cristina De Fuentes, and Francisco Sogorb-Mira. Determinants of foreign exchange risk management in Latin American firms, *Academia (Consejo Latinoamericano de Escuelas de Administración)*, 2019, 32(4): 502–524.
- [16] Dang Vu Hung, and Valerie Lindsay. Determinants of hedging strategy in foreign exchange risk management by exporting small and medium-sized enterprises: The mediating role of resources, *Journal of general management*, 2022, 48(1): 3–13.