

Research on the Impact of the Construction of Cross-border E-commerce Comprehensive Pilot Zones on China's Export Transformation and Upgrading

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Abstract: Cross-border e-commerce has emerged as a new growth point in foreign trade. While the Dalian comprehensive pilot zone has made some progress, its development is constrained by issues such as the global economic slowdown, the relatively small scale of cross-border e-commerce, a high concentration of export commodities, imperfect information mechanisms, and high overall costs. To address these challenges, this paper explores the importance of the construction of the Dalian comprehensive pilot zone for cross-border e-commerce to the transformation and upgrading of exports. Based on my research project, "Research on Path Optimization of Financial Support for the Development of Advanced Manufacturing Clusters in Dalian," this paper analyzes the current challenges and limiting factors and proposes corresponding countermeasures and suggestions.

Keywords: Cross-border e-commerce comprehensive pilot zone; Cross-border e-commerce; Export transformation and upgrading; Foreign trade export

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1. Background related to cross-border e-commerce comprehensive pilot zones and trade exports

1.1. Introduction to the comprehensive pilot zone for cross-border e-commerce

The cross border e-commerce comprehensive pilot zone is a policy pilot zone established in China to promote the transformation and upgrading of foreign trade and explore institutional innovation in cross-border e-commerce. Since Hangzhou was approved as the first comprehensive pilot zone in 2015, China has established 178 comprehensive pilot zones in eight batches, forming a multi-level open system covering the whole country.

The latest expansion focuses on strengthening border nodes facing Northeast Asia and ASEAN, such as

Dandong and Fang Cheng Gang cities; Hainan Island has become the first provincial-level comprehensive pilot zone in China, relying on the policy advantages of “zero tariffs and simplified tax system” of the free trade port to create an international live streaming e-commerce hub ^[1].

The core task of the comprehensive pilot zone is to promote the deep integration of “Internet plus foreign trade” and build a cross-border e-commerce whole chain ecosystem through policy innovation, technology empowerment and industrial collaboration. At the policy level, the comprehensive pilot zone has piloted tax facilitation measures such as “no ticket tax exemption” and “approved collection of corporate income tax”, and optimized the customs clearance process (such as the “9710” and “9810” regulatory models), significantly reducing the compliance costs of enterprises.

At the service level, relying on the “six systems and two platforms” (six major systems including information sharing, financial services, intelligent logistics, online comprehensive service platform, and offline industrial park platform), we provide one-stop cross-border trade solutions for enterprises ^[2].

1.2. The importance of cross-border e-commerce comprehensive pilot zone construction for export transformation and upgrading

The importance of cross-border e-commerce comprehensive pilot zone construction for export transformation and upgrading are as follows:

- (1) The comprehensive pilot zone has reduced the export costs of enterprises through institutional innovation. The pilot implementation of policies such as “no invoice tax exemption” and “approved collection of corporate income tax” has effectively solved the tax compliance problems of cross-border e-commerce enterprises; The customs supervision models such as “9710” and “9810” have simplified the customs clearance process, enabling small and medium-sized enterprises to participate in international trade more conveniently;
- (2) The comprehensive pilot zone promotes the digital transformation of the industrial chain. By building an online comprehensive service platform and offline industrial parks, integrating supporting services such as payment, logistics, and finance, we aim to assist traditional foreign trade enterprises in transitioning to digital operations;
- (3) The comprehensive pilot zone helps to expand diversified international markets. Each pilot zone has opened up emerging market channels for the “the Belt and Road”, RCEP and other regions in combination with its regional advantages;
- (4) The comprehensive pilot zone has cultivated new competitive advantages in foreign trade. Through the “cross-border e-commerce + industrial belt” model, promote characteristic industry clusters to go global.

2. The current situation of China’s foreign trade exports and cross-border e-commerce development

2.1. The current situation of China’s foreign trade exports

In 2025, against the backdrop of profound changes in the global economic and trade environment, China’s foreign trade exports will show a development trend of both overall pressure and structural upgrading. According to the latest data, the total export volume of goods trade in China increased by 7.2% year-on-year in the first five months of 2025.

Although it maintained positive growth, the growth rate slowed down compared to the same period last year,

and the monthly fluctuations were significant. The monthly export volume in May was 316.1 billion US dollars, a year-on-year increase of 4.8%, a decrease of 3.3 percentage points from April, reflecting a weakening of export growth momentum under the dual pressure of high base effect and weakened global demand.

It is worth noting that the export commodity structure continues to optimize and upgrade: mechanical and electrical products, as the main export force, account for 59.85%, among which technology intensive products perform particularly well - integrated circuit exports increased by 33.4%, automobile exports increased by 13.7%, and the “new three” represented by new energy vehicles, lithium batteries, and photovoltaic products maintained a high-speed growth of nearly 30%. In contrast, traditional labor-intensive products such as clothing and shoes have continued to decline, with a year-on-year decrease of over 5%.

2.2. The current status of cross border e-commerce development in China

China’s cross-border e-commerce industry has entered a stage of high-quality development, showing a sustained growth trend in recent years, with exports occupying an important position in overall trade. Data shows that the total import and export volume of the entire industry will reach 2.63 trillion yuan in 2024, an increase of 1 trillion yuan compared to 2020, with an export contribution rate of up to 74%; In the first quarter of 2025, it will continue to maintain a strong growth trend, with a growth rate of 15.6%, significantly higher than the overall growth rate of foreign trade. In terms of regional distribution, the Yangtze River Delta and Pearl River Delta, as traditional industrial clusters, continue to contribute over 60% of the country’s transaction volume.

However, the central and western regions have shown a rapid growth trend, with key cities such as Chengdu and Xi’an experiencing growth rates exceeding 30%. In terms of business models, the full custody and semi custody models dominate the upgrading of business formats. Platforms represented by Temu, AliExpress, and SHEIN have significantly reduced the entry barriers for small and medium-sized manufacturing enterprises in the international market by integrating one-stop services such as operations, logistics, and after-sales^[3].

3. Restrictive factors for China’s export transformation and upgrading

3.1. The slowdown in global economic growth has a negative impact on the development of foreign trade

According to the latest Global Trade Data and Prospects released by the World Trade Organization (WTO), the global trade volume of goods will only increase by 1.7% in 2025, a decrease of one percentage point from the trade growth rate in 2024, with imports from North America and the European Union both experiencing negative growth.

The World Bank’s “Global Economic Outlook” report released on January 9, 2025 also shows that global economic growth is expected to slow down for the fourth consecutive year in 2025, dropping to 2.4%, lower than the 2.6% in 2024. From 2021 to 2025, the global economy will grow by 2.2%, the weakest five-year growth rate since the early 1990s. It can be seen that the world economy is facing multiple downside risks, and growth remains weak.

At the same time, according to the customs export data, the export scale of Singapore, ASEAN, the United States, China, Taiwan region of China, and other countries and regions has decreased^[4]. It can be seen that the global economic slowdown and regional policies have posed great challenges to foreign trade, and there is an urgent need to develop other overseas markets.

3.2. The scale of cross-border e-commerce is relatively small and the concentration of exported goods is high

The scale of cross-border e-commerce accounts for a relatively small proportion of the overall import and export scale. From the perspective of exported goods, products are mostly concentrated in integrated circuits, ships, labor-intensive products, agricultural products, basic organic chemicals, etc., accounting for 79.4% of the total export scale in 2023.

The high concentration of exported goods also means high foreign trade risks. With the prevalence of anti-globalization and unilateralism, regional wars and political changes, and increasing global trade uncertainty, it may have adverse effects on export markets ^[5].

3.3. The mechanism for government data collection, sharing, and application is not perfect

The imperfect part of the mechanism for government data collection, sharing and application is outlined as follows:

- (1) There are limitations to the collection methods of foreign trade data, manifested in the fact that the data collection and users are mainly government departments, and the external information sharing mechanism is still incomplete. There is a lack of a unified platform for publishing and querying foreign trade information, as well as a database for foreign trade enterprise information, resulting in fragmented and untimely disclosure of publicly available information ^[6];
- (2) The coverage of foreign trade data collection is limited. Foreign trade exports are a full process, multi-dimensional, and diversified business activity. As a third-party regulatory and service organization, although it is difficult for the government to conduct full process and all-round data collection, the current efforts to mine information from overseas consumer markets and local foreign trade industry supply sides are still slightly insufficient;
- (3) Foreign trade enterprises themselves also face problems such as avoiding important information and selectively disclosing information in order to maintain their corporate image, resulting in market information asymmetry ^[7];
- (4) There are information barriers among cross-border e-commerce enterprises, which result in weak collaborative development between cross-border e-commerce and logistics companies, making it difficult to fully utilize each other's advantages and jointly enhance the overall efficiency and level of cooperation.

3.4. High comprehensive costs exacerbate export pressure for cross-border e-commerce enterprises

The overall cost increase has become a major obstacle to the development of cross-border e-commerce, manifested in logistics costs, marketing costs, and overseas warehouse costs ^[8]. For instance:

- (1) It manifests in high logistics costs. The cost of cross-border logistics mainly focuses on warehousing and transportation, including labor costs, rental costs, transportation costs, etc. Cross border logistics involves overseas transportation, outbound customs clearance, cross-border transportation, inbound customs clearance, distribution and delivery, which makes logistics costs even higher. If any two links are not properly connected, additional logistics costs will be incurred;
- (2) It manifests in high marketing costs. When cross-border e-commerce enterprises operate cross-border e-commerce platforms simultaneously, although the basic operating costs of the platform are not high, the basic membership rights in product display and supply information release are limited, resulting in

low inquiry volume for the enterprise. In order to increase traffic, the enterprise needs to continuously purchase additional services. For enterprises, the burden of platform marketing expenses is relatively heavy, and with the growth of brand cultivation and online store ratings, the increase in transaction volume of cross-border e-commerce platforms is a relatively long process^[9];

- (3) This is reflected in the cost of overseas warehouses. The high operating costs of overseas warehouses, high rental fees for overseas warehousing, high labor costs overseas, and high system operating costs have led to high construction and operating costs for overseas warehouses. Small and medium-sized foreign trade enterprises also face problems such as small scale and financing difficulties, making it difficult to establish dedicated overseas warehouses, which hinders the development of cross-border e-commerce business^[10].

4. Conclusion and suggested countermeasures

4.1. Expand market diversification and gain insight into overseas market environments

Relevant departments should take the lead in collaborating with local cross-border cooperation platforms in China, such as AliExpress, Alibaba International, TEMU, SHEIN, etc., to jointly create a fast track to enter emerging overseas markets such as the Middle East, Latin America, and Africa through full custody and semi custody models, reducing dependence on specific markets and avoiding potential market risks^[11]. The demands of emerging market customers are also rapidly changing, with increasing emphasis on product quality and customized services.

In this regard, we should empower both the market and supply chain sides, establish emerging market consumer insight centers in advantageous industries, deeply understand the needs of consumers in Latin America, the Middle East, and Africa, and disclose demand information to enterprises to meet the trend of personalized and differentiated emerging markets, and improve product “experience quality”.

Strategic partnerships with local e-commerce platforms in Southeast Asia such as Lazada and Shopee should be formed, and leverage their platform influence to attract cross-border export business. We should also collaborate with cross-border logistics companies to open a Southeast Asian cross-border e-commerce sea freight express, creating end-to-end full chain services for full container load and bulk shipping. Building a logistics hub in Southeast Asia might help improve cross-border logistics efficiency and reduce logistics costs. Key enterprises visit should be organized and increase participate in cross-border e-commerce markets in Southeast Asia, including Malaysia, Singapore, Brunei, Thailand, Indonesia, etc^[12].

4.2. Innovative reform of cross-border e-commerce supply chain

On the supply chain side, we will establish a new type of cross-border e-commerce supply chain platform and continuously enhance the flexibility of the supply chain. Leveraging the platform’s agglomeration advantage, we will innovate the supply chain platform to bring together cross-border sellers and suppliers. By establishing a centralized manufacturing cross-border flexible supply chain, we will open up vertical supply chains, facilitate rapid integration of upstream and downstream industrial chains, and achieve ecological closure across the entire industrial chain.

We will also build a supporting service system for cross-border e-commerce in various industries, including electromechanical products, integrated circuits, aquatic products, labor-intensive products, agricultural products, and basic organic chemicals. Furthermore, we will cultivate “specialized, refined, unique, and excellent” cross-

border e-commerce industrial parks, each with distinct characteristics and differentiated development ^[13].

4.3. Break down information barriers and enhance the informatization of customs clearance to better serve enterprises

Based on new quality productivity such as big data, cloud computing, the Internet of Things, artificial intelligence, and blockchain, the “data + grid” approach is used to strengthen the collection and application of information among government departments such as industry and commerce, customs, taxation, and ports, and to manage the entire process before, during, and after the event, in order to achieve “traceability from the source, traceability to the destination, risk monitoring, and accountability”.

Realize information sharing and internal circulation nationwide, that is, cross-border data interconnection and intercommunication in comprehensive pilot zones in Northeast, North, South China and other regions, and information interconnection and intercommunication between various cross-border e-commerce comprehensive pilot zones and industrial parks, industrial parks, free trade zones, and bonded zones in real time, realizing internal regional information coordination, and achieving regional coordination and cross-border e-commerce industry coordinated development through external information sharing ^[14].

4.4. Release policy dividends and reduce cross-border operational pressure

We should vigorously develop multimodal transportation and improve the connection between various logistics links. By improving laws and regulations, strengthening the construction of waterway, aviation, and railway infrastructure, promoting the standardization of facilities and equipment, encouraging the integrated development of cross-border logistics enterprises, and strengthening cooperation between cross-border logistics enterprises, we aim to promote the development of multimodal transportation such as “water, road, air, and rail” and strengthen the connection between various transportation modes.

Other than that, we should also launch comprehensive reverse logistics services, clarify tax procedures for returned goods, customs clearance solutions for various types of goods, formulate detailed rules and reverse logistics standards for cross-border e-commerce returns, optimize customs supervision processes, and invite multiple high-quality cross-border logistics service companies to develop comprehensive logistics plans based on different types of goods and export return modes, to safeguard the “home” journey of goods ^[15].

4.5. Encourage traditional foreign trade enterprises to “go global” across borders

We should build a demonstration ecological community of “digital intelligence technology + industrial services”, build a digital intelligence industry symbiotic network around digital infrastructure, strengthen the construction of digital infrastructure such as cloud computing, artificial intelligence, industrial Internet, data center, and guide enterprises to improve the value of traditional brands by digital means. Moreover, we should regularly hold cross-border e-commerce exchange meetings to share new opportunities in the cross-border e-commerce market, and invite cross-border e-commerce platforms such as AliExpress, Alibaba International, TEMU, SHEIN that have already implemented custody models to share one-stop service models such as full custody and semi custody.

Traditional enterprises should be encouraged to carry out overseas trademark registration and international certification of their own brands, give priority to projects and rewards to enterprises that have their own trademarks in the destination country, and promote enterprises to use their own brands to conduct business

Cross-border e-commerce enterprises should participate in domestic and international exhibitions, provide information services and support for market development, and help brands go global. Leading enterprises in

industries such as equipment manufacturing and new energy should be supported to accelerate their digital transformation, vigorously cultivating local vertical platforms, and forming a trend of industry leaders as the core, integrating supply chains, and driving upstream and downstream related enterprises to go global together. Innovative models such as “bonded + live streaming” and “experience store + live streaming”, should be developed and traditional foreign trade and manufacturing enterprises ought to be promoted to use cross-border e-commerce to explore markets, promote internal and external collaboration, and accelerate brand going global.

5. Conclusion

Based on the comprehensive research, it can be seen that the construction of Dalian Cross border e-commerce comprehensive pilot zone has become a key engine for promoting the transformation of Dalian’s export trade from “scale expansion” to “quality and efficiency”. Its empowering role in export transformation and upgrading not only has regional characteristics, but also provides practical reference for similar cities across the country. In the future, Dalian needs to take the cross border e-commerce comprehensive pilot zone as a pivot, further focus on the digital transformation of core industries, strengthen talent cooperation and training with universities and vocational colleges, and optimize the global layout of overseas warehouses, in order to fully leverage the driving role of cross-border e-commerce in export transformation and upgrading, achieve a leap from “Dalian Manufacturing Export” to “Dalian Brand Global Operation”, and provide a more valuable “Dalian Plan” for coastal cities in China to promote high-quality development of foreign trade through cross-border e-commerce.

Disclosure statement

The authors declare no conflict of interest.

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