

# Analysis of China's Export Growth under The Background of Cross-Border E-Commerce Development

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**Abstract:** In recent years, cross-border e-commerce has witnessed rapid development in China, which is regarded as a new driving force for the transformation and upgrading of foreign trade and high-quality development. This paper analyzed China's export growth, export structure and export direction against the background of various development stages of cross-border e-commerce. The main conclusions are as follows: First, the rapid growth of cross-border e-commerce does not drive the rapid growth of China's export. Under the influence of sluggish external demand, rising internal labor costs and epidemic prevention and control, China's export is still unable to maintain sustained growth, and there is no sustained decline, which may be the great contribution of cross-border e-commerce to China's export. Secondly, the rapid development of cross-border e-commerce has not led to significant changes in China's export structure, and cross-border e-commerce has not played a role in optimizing the allocation of factors. Finally, the rapid development of cross-border e-commerce has not significantly affected China's export direction. The conclusions of this paper can provide reference for relevant research on cross-border e-commerce.

**Keywords:** Cross-border e-commerce, China's export trade, China's export growth analysis.

## 1 Introduction

China's Ministry of Commerce said the rapid development of cross-border e-commerce has become a new driving force for the transformation and upgrading of foreign trade and high-quality development in recent years. Cross-border e-commerce grew by nearly 10 times in the past five years, and would continue to maintain double-digit growth in 2021. Market procurement trade increased by five times in the past six years, and exports hit a new record high in 2021.

Researches on cross-border e-commerce are mostly theoretical discussions, with little empirical analysis. Empirical analysis only focuses on the role of cross-border e-commerce in reducing transaction costs. Sun analyzed that cross-border e-commerce lowers consumer prices by reducing e-commerce and search costs [7]. Ma analyzed the mechanism of cross-border e-

commerce to reduce transaction costs in trade [6]. At the theoretical level, the discussion mainly focuses on the mechanism of cross-border e-commerce promoting double cycle [5, 8]. Zhang and Han both believe that the growth of cross-border e-commerce can optimize the allocation of factor resources [1]. Zhao puts forward relevant countermeasures and suggestions on the basis of analyzing the mechanism of cross-border e-commerce promoting double cycle [9]. Gao pointed out that the sustained growth of China's export needs the promotion of cross-border e-commerce [2]. Some scholars point out that expanding regional economic cooperation and optimizing foreign trade environment is the key factor to promote China's export growth [3]. Liu studied the impact of global value chain on China's export under the framework of Belt and Road Cooperation [4].

Is the rapid growth of cross-border e-commerce just a statistical facade, or has China's exports changed profoundly? Statistics on cross-border e-commerce have only begun in recent years. The base statistical data is very small, coupled with short-term positive policy impact, prone to rapid growth performance. The development of cross-border e-commerce is a process of the transformation and development of China's foreign trade, which should be observed and analyzed in the context of China's foreign trade development. This paper first analyzes several stages of the development of cross-border e-commerce, and then analyzes China's long-term export data against the background of the development stage of cross-border e-commerce to observe and analyze whether different stages of the development of cross-border e-commerce have a significant impact on China's export growth rate, export structure and export direction.

## **2 Cross-border e-commerce development stage**

In China, the development of the cross-border e-commerce is a process of promoting exports through innovative modes when exports are facing some difficulties. According to the main characteristics of cross-border e-commerce innovation mode, it can be divided into three stages: transaction information service stage, process integration stage and service expansion stage.

### **2.1 Transaction Information Service Stage**

From 2002 to 2008, cross-border e-commerce was in its infancy, providing transaction information services for China's exports.

In 2002, the SARS epidemic blocked the traditional foreign trade marketing and promotion, and B2B cross-border e-commerce model emerged and provided transaction information services. Under the influence of SARS, many exhibitions were cancelled, prompting B2B websites to provide transaction information services for small and medium-sized enterprises. In this period, the annual fee of cross-border e-commerce transaction information service could reach hundreds of thousands of yuan. The strong demand for international procurement provides excellent opportunities for small and medium-sized enterprises to develop international markets through B2B e-commerce platforms during this period. At the same time, B2B cross-border e-commerce has also started successfully.

### **2.2 Process Integration Stage**

Cross-border e-commerce development was in the process integration stage between 2008 and 2015. The 2008 financial crisis had an extremely serious impact on the world economy. The

market is depressed, importers are reluctant to take risks and demand for many traditional large orders for low-cost mass production has fallen sharply. Small batch and multi-frequency small foreign trade orders became the main demand type of foreign trade export in this period.

B2C cross-border e-commerce mode directly establishes the connection between suppliers and terminal consumers, and creates a more efficient supply chain channel and reduces supply chain costs compared with the traditional B2B supply chain. In the early stage, the B2C model serving small foreign trade faced many difficulties in the export process, which was difficult for the traditional export trade process to support small foreign trade. Individual consumers are unable to provide invoices to suppliers, resulting in non-declaration. Therefore, small foreign trade can only choose samples or gifts to choose direct export without customs declaration. Non-declared exports further affect the foreign exchange settlement process, and foreign exchange can only be collected through the informal way of overseas accounts, increasing the risk of foreign exchange settlement. Do not have bill, also cannot enjoy national export drawback policy without verification cancel. In order to develop the B2C model, cross-border e-commerce platforms continue to integrate foreign trade services, gradually forming a complete industrial ecological chain including online payment, freight, insurance, inspection, financing and other services. In the process of the development of B2C mode, the government has also continuously explored the e-government mode serving cross-border e-commerce, constantly innovating the system and improving the level of trade facilitation.

### **2.3 Service Expansion Stage**

Cross-border e-commerce development has entered the service expansion stage since 2016. Cross-border e-commerce platform services have been improved, providing greater support for smes to cope with shocks. In order to improve the user experience of cross-border e-commerce export, cross-border e-commerce platforms and governments are also committed to building overseas warehouses and optimizing international logistics. China has begun to build comprehensive pilot zones for cross-border e-commerce, establishing more than 100 such zones, covering some third - and fourth-tier cities. Cross-border e-commerce platforms rely on big data to launch credit insurance services. Cross-border e-commerce platforms provide credit guarantee based on transaction data. Sellers and buyers with good credit can effectively establish trust relationship, reduce transaction cost of establishing trust and expand transaction demand. Through big data, it provides financing credit granting services for sellers and buyers, simplifies the traditional settlement process, and transforms credit into capital efficiency. The value of transaction data encourages cross-border e-commerce platforms to offer export subsidies to export suppliers.

## **3 Analysis of China's export growth**

The export data of China were obtained from The UN COM Trade database. Taking 1992 as the base period, the export data were subtracted from the CPI of the United States to generate the constant price data series. The US CPI data comes from the IMF.

China's export maintained rapid growth from its accession to the WTO until the 2008 financial crisis, see Figure 1. The average growth rate doubled from the 1990s, from 10.71 per cent in 1992-2002 to 21.17 per cent in 2002-2008. This period of rapid growth is also the initial stage

of cross-border e-commerce. According to data widely used in cross-border e-commerce research, the growth rate of cross-border e-commerce in this period is lower than that of China's export in the same period. This may be because in this stage, cross-border e-commerce mainly provides transaction information services, and the transaction process is still the traditional trade process. Although it promotes China's export growth, it cannot be observed in the data statistics. The financial crisis saw a drop of -15.8% in 2009 from the previous month, but growth soon resumed, averaging just 5.1%. Cross-border e-commerce grew rapidly during this period. The application of information technology in e-government and institutional innovation have improved the level of trade facilitation. Compared with the initial stage of cross-border e-commerce, export efficiency has been greatly improved and transaction costs have been reduced. During this period, the decline in processing trade exports caused by rising labor costs began to show up. In 2015, processing trade exports fell by 10%. In 2014, the trade sanctions caused by the Situation in Crimea began to disrupt the international economic order, and the decline of purchasing power in the international market led to a decline in exports. In 2016, trade protectionism spread further, and sanctions and tariffs had a huge impact on the international economic order. The COVID-19 pandemic, which began to spread around the world in 2019, has made the global economy worse. During the same period, although data showed that cross-border e-commerce continued to grow rapidly, the growth rate of China's exports slowed down further, with an average growth rate of only 1.24% from 2015 to 2020.

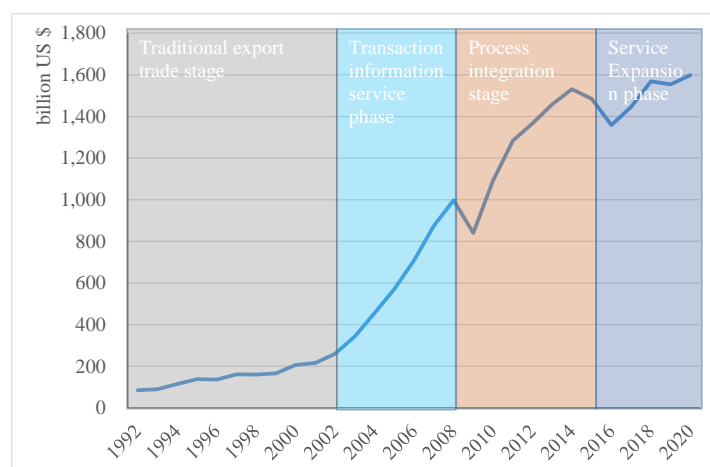


Fig. 1. China's Exports of goods 1992-2020.

By comparing the growth rate of cross-border e-commerce with that of China's export on the basis of 2005, we found that the growth rate of China's export slowed down in the stage of slow growth of cross-border e-commerce, and the growth rate of China's export slowed down in the stage of rapid growth of cross-border e-commerce, see Figure 2.



Fig. 2. China's export growth rate and cross-border e-commerce growth rate from 2006 to 2020.

Why is there a negative correlation between the growth of cross-border e-commerce and China's export growth? At least what is certain is that the rapid growth of cross-border e-commerce has not led to rapid growth of China's exports. The different stages of cross-border e-commerce development have experienced a series of different challenges at home and abroad, including the SARS epidemic in 2002, the financial crisis in 2008, the Crimean War in 2014, the Sino-US trade friction since 2016, and the COVID-19 epidemic in 2019. After the financial crisis, the policy dividend of China's early accession to WTO has been consumed by the chaotic international economic order. Coupled with the continuous increase of labour costs in China, the original advantages of processing trade are also few. Perhaps, China's export is still difficult to maintain sustained growth, there is no sustained decline, it is the continuous evolution of cross-border e-commerce constantly reduce transaction costs to promote export results.

#### 4 Analysis of China's export structure

Merge HS classified data into 9 industry types. The corresponding relationship between industry types and HS classification data is as follows: animal and food correspond to HS01-24; Minerals and materials correspond to HS25-27,44-49,68-71; Chemical products correspond to HS28-40; Textiles & footwear correspond to HS41-43, 50-63, 64-67; Metal products correspond to HS72-83; Mechanical and electronic products correspond to HS84-85; The vehicles correspond to HS86-89; Miscellaneous products corresponding to HS90-92, 94-96; Special products correspond to HS98-99.

The most significant feature of China's export structure change in the past 30 years is the decline in the proportion of textile, footwear and hat industry and the rise in the proportion of machinery and electronics industry, see Figure 3. The proportion of the textile, footwear and hat industry dropped from 39.02% in 1993 to 13.91% in 2020. The proportion of mechatronics industry increased to 44.41 percent from 13.59 percent in 1992.

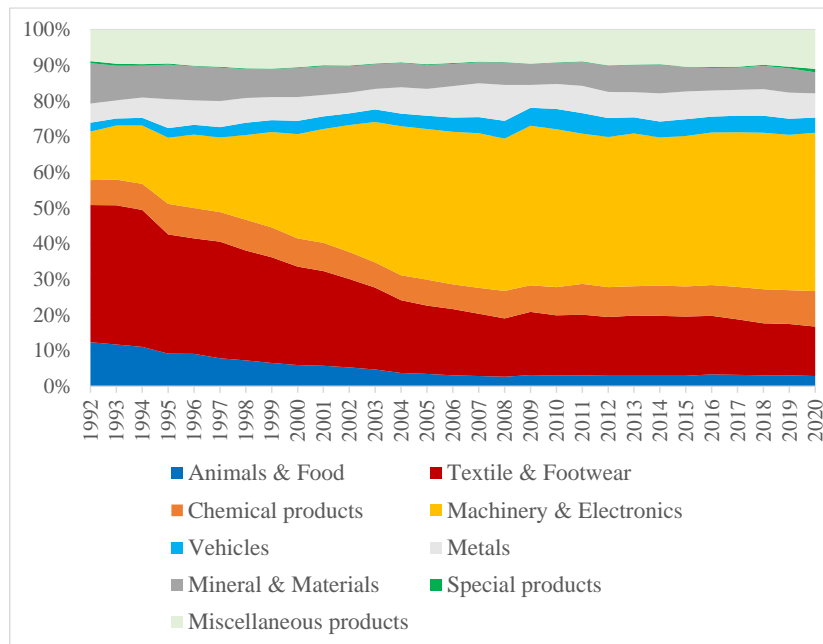


Fig. 3. China's goods export structure from 1992 to 2020.

Does cross-border e-commerce facilitate this structural transformation? In the traditional trade stage, the textile, footwear and hat industry accounted for 32.14%, and the mechanical and electronic industry accounted for 22.94%. In the initial stage of cross-border e-commerce, the proportion of the textile, footwear and hat industry dropped to 19.94%, 12.20%, and the proportion of the machinery and electronics industry rose rapidly to 41.10%, up 18.16%. However, in the stage of rapid growth of cross-border e-commerce, the proportion of textile, footwear and hat industry only further decreased by 4.72%, and the proportion of mechanical and electronic industry only increased by 2.25%. Therefore, the significant change in China's export structure during this period is not the result of the development of cross-border e-commerce.

## 5 Analysis of China's export direction

A significant feature of China's export direction is that the concentration degree is continuously decreasing. In 1992, the top 20 exporting countries accounted for 89.68% of the total export, and this proportion dropped to 85.03% in 2002, 75.25% in 2008, 73.83% in 2015, and 73.26% in 2020, with the decline gradually decreasing. The United States, Japan and Hong Kong are the major export destinations, with their share of total exports decreasing from 68.04% in 1992 to 33.5% in 2020. The proportion of China's exports to BRICS and ASEAN countries has increased significantly.

Growth rate of China's exports to major trading partners from 2002 to 2008 is shown in Table 1. In the initial stage of cross-border e-commerce development, from 2002 to 2008, the

significant feature of China's export direction change was the increase in the proportion of exports to BRICS countries, which increased by 3.68%.

Table 1. Growth rate of China's exports to major trading partners 2002-2008.

Partner	2002-2008
Japan	-6.76%
China, Hong Kong SAR	-4.62%
USA	-3.84%
India	1.39%
Russian Federation	1.23%
Brazil	0.86%

India recorded the largest increase in its share of exports during the period, up 1.39%. Russia followed with a 1.23 percent increase. Third was Brazil, which grew by 0.86%.

Table 2 shows the growth rate of China's exports to ASEAN countries from 2008 to 2015. During the period of rapid development of cross-border e-commerce, the significant feature of China's export direction from 2008 to 2015 is that the proportion of ASEAN countries' exports increased by 4.21%. Vietnam saw the largest increase in its share of exports during the period, with an increase of 1.85 percent. Thailand grew by 0.59%, the Philippines by 0.53% and Malaysia by 0.43%.

Table 2. Growth rate of China's exports to ASEAN countries 2008-2015.

Partner	2015-2008
Viet Nam	1.85%
Thailand	0.59%
Philippines	0.53%
Malaysia	0.43%
Indonesia	0.31%
Myanmar	0.29%
Cambodia	0.09%
Brunei Darussalam	0.05%
Lao People's Dem. Rep.	0.04%
Singapore	0.03%

Table 3 shows growth rate of China's exports to ASEAN countries from 2015 to 2020. From 2015 to 2020, the share of China's exports to ASEAN countries will further increase by 2.62 percent. Vietnam continued to see the largest increase in its share of exports, up 1.49%.

Table 3. Growth rate of China's exports to ASEAN countries 2015-2020.

Partner	2015-2020
Viet Nam	1.49%
Philippines	0.44%
Thailand	0.27%
Malaysia	0.24%
Cambodia	0.15%
Indonesia	0.07%
Singapore	-0.06%
Myanmar	0.06%
Brunei Darussalam	-0.04%
Lao People's Dem. Rep.	0.00%

Since 2002, the share of China's exports to Vietnam has continued to increase, with a cumulative increase of 3.73%. It was followed by India with a cumulative increase of 1.76%. Third was Thailand, with a cumulative increase of 1.04%. Fourth was the Philippines, with a cumulative increase of 0.99 percent. The fifth was Brazil with a cumulative increase of 0.90% and the sixth was Russia with a cumulative increase of 0.87. China's exports to Mexico, Australia and Saudi Arabia also saw sustained growth. The cumulative increase was 0.85% for Mexico, 0.66% for Australia and 0.57% for Saudi Arabia.

Has the rapid development of cross-border e-commerce affected the direction of China's exports? The developed markets of international cross-border e-commerce are mainly developed countries. Although China's cross-border e-commerce platforms tend to favour BRICS and ASEAN countries. But the biggest increase in exports to BRICS countries has not been during periods of rapid growth in cross-border e-commerce. In the period of rapid growth of cross-border e-commerce, Vietnam, which has the largest increase in its export share, is not an important market for cross-border e-commerce platforms. Therefore, the rapid development of cross-border e-commerce has not significantly affected China's export direction.

## 6 Conclusions

This paper analysed China's export growth, export structure and export direction against the background of various development stages of cross-border e-commerce. The main conclusions are as follows: First, the rapid growth of cross-border e-commerce does not drive the rapid growth of China's export. Under the influence of sluggish external demand, rising internal labour costs and epidemic prevention and control, China's export is still unable to maintain sustained growth, and there is no sustained decline, which may be the great contribution of cross-border e-commerce to China's export. Secondly, the rapid development of cross-border e-commerce has not led to significant changes in China's export structure, and cross-border e-commerce has not played a role in optimizing the allocation of factors. Many studies have mentioned that cross-border e-commerce can promote the optimal allocation of production factors in China, and such a view needs further demonstration. Finally, the rapid development



of cross-border e-commerce has not significantly affected China's export direction. China's export direction has obvious characteristics of change, Hong Kong and Japan's export share decreased significantly. The proportion of BRICS and ASEAN countries increased. But this process is not just taking place against the backdrop of the rapid growth of cross-border e-commerce.

Next, the influence of cross-border e-commerce on China's export structure transformation will be further discussed. Based on the VAR model, the interaction between cross-border e-commerce and China's export structure can be analyzed by taking the trade volume of cross-border e-commerce as the independent variable and the Index of China's export structure as the dependent variable.

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