

An Empirical Study of Cross-border E-commerce's Influence on Traditional Import and Export Trade

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Abstract: The paper studies China's cross-border E-commerce's influence on traditional import and export trade and discusses what measures and trade measures to take to bolster the coordinated development of China's cross-border E-commerce and traditional import and export trade in a world where cross-border E-commerce develops quickly. The paper makes regression empirical analysis of data collected from 2008 to 2018e. The results show that the development of China's cross-border E-commerce is closely related to traditional import and export trade. In the short term, China's cross-border E-commerce will impact traditional import and export trade and the impact is negative.

1. Introduction

As a catalyst for economic integration, cross-border E-commerce has gradually become the technological base of trade globalization. Cross-border E-commerce removes the barriers between countries and the rifts in international trade, gradually making trade beyond national borders. Meanwhile, its emergence changes the landscape of world economy and trade. Such great change is of strategic significance.

Foreign studies on cross-border E-commerce focus more on factors affecting the process of cross-border E-commerce. How to solve the contentious online issues of cross-border E-commerce is also a major subject. Studies on the influence of cross-border E-commerce on international trade mainly focus on the major role it plays in economic globalization. Also studies of its different influence on developed and developing countries from various perspectives are also carried out, etc. When domestic scholars study cross-border E-commerce on international trade, they mainly focus on how small and medium sized enterprises apply cross-border E-commerce so that it can bolster international trade. Overall, these studies focus on the deficiencies in the application of cross-border E-commerce in international trade. Domestic researches tend to focus on phenomenon description rather than necessary empirical analysis.

2. Mechanism of cross-border E-commerce's influence on traditional import and export trade

2.1 Cross-border E-commerce's influence on the size of traditional import and export trade

The emergence of cross-border E-commerce brings opportunities as well as great challenges to traditional import and export trade. At its initial stage, cross-border E-commerce undoubtedly impacted traditional import and export trade with its simple procedure, advanced technology and rapid development. In a short time, people's curiosity of and attempt at novelty inevitably enabled cross-border E-commerce to replace parts of traditional trade. As a result, the volume of traditional trade shrank and its development was impeded. However, though the procedure of traditional trade is complex, it is the safest and more ensured way of trade with every link clear and transparent, which is hard to attain by online trade in cross-border E-commerce. Therefore, in the long term, cross-border E-commerce and traditional trade will develop complementarily, enlarging China's total trade size.

2.2 Cross-border E-commerce's influence on international trade management

The emergence of cross-border E-commerce undoubtedly impacted traditional international trade greatly. Cross-border E-commerce is equipped with advanced technology, giving it competitive edge over traditional international trade in scientification. Meanwhile, cross-border E-commerce can help to expand the market of traditional international trade as one of the former's traits is to use of the internet skillfully. Trade on such platform can intangibly change the existing management of international trade.

2.3 Cross-border E-commerce's influence on the intangible development of international import and export trade

Most cross-border E-commerce transactions are carried out through the internet. As the global networking develops and the communication environment of the internet becomes perfect, these factors provide advantages to the further development of cross-border E-commerce. Making use of the convenient internet, international trade can cooperate with other enterprises. Online trade can help to bolster the new development of trade in China. Therefore, cross-border E-commerce facilitates the intangible development of international trade in the context of globalization.

2.4 Cross-border E-commerce's influence on the real-time development of international trade

Traditional trade is generally restricted by various factors. The rapid rise of advanced technology and telecommunication technology provides bridge for timely communication between people. In such context, restrictions on the time, space and location of trade are removed, which greatly bolster the successful transactions. Due to cross-border commerce, trade between people become more convenient and its restrictions are fewer than traditional trade.

3. Theoretical assumption

A model for the empirical analysis of cross-border E-commerce's influence on traditional import and export trade is established, in which the total volume of traditional import and export trade is regarded as the explaining variable Y. Since there are various factors affecting China's import and export trade, cross-border E-commerce is the key variable in the study and consumer price index and foreign investment directly affect the trade volume, the paper selects the following three explaining variables:

(1) The total trade size of cross-border E-commerce (X1) -- agents carrying out cross-border E-commerce transactions are various. They mainly carry out electronic transactions through the internet and complete the transaction using cross-border logistic delivery. Cross-border E-commerce is unique in foreign trade. In China, cross-border E-commerce and traditional foreign trade compete for market share, so the development of cross-border E-commerce will impact traditional trade to some extent. The theory assumes that the total trade size of cross-border E-commerce and the total volume of traditional import and export trade are negatively correlated.

(2) Consumer price index CPI (X2) -- is a major economic indicator of consumer consumption, macroeconomic analysis and decision-making and national economic accounting. China's continuous rise of consumption demand will bolster traditional import and export trade to some extent. The theory assumes consumer price index CPI is positively correlated to the total volume of traditional import and export trade.

(3) Foreign direct investment FDI (X3) -- also called international direct investment. Its chief purpose is for more benefit. To achieve this, it controls operating management and it corresponds to international indirect investment. After the reform and opening up, China's economy began to develop rapidly and the country gradually increased foreign direct investment, which bolsters foreign trade, especially the growth of China's import. The theory assumes that foreign direct investment FDI is positively correlated to the total volume of traditional import and export trade.

4. Data collection and collation

The paper analyzes the above data, refers to related literature and collects data concerning the total volumes of traditional import and export trade from 2008 to 2018e (source: National Bureau of Statistics), the trade size of cross-border E-commerce (source: Iresearch), consumer price index CPI (source: National Bureau of Statistics) and foreign direct investment FDI (source: National Bureau of Statistics). All the data below have removed the influence of CPI (data after removal = the original data/CPI).

5. Model construction and result analysis

Construct a linear regression model using Eviews gradual regression and choose the total volume of traditional import and export trade as the explained variable Y, the total trade size of cross-border E-commerce (X1) , consumer price index CPI (X2) and foreign direct investment FDI (X3) as explaining variables and μ as the random error. The assumed model is

$$\ln Y = \alpha + \beta_1 \ln X_1 + \beta_2 \ln X_2 + \beta_3 \ln X_3 + \mu$$

α is the constant term, β_1 、 β_2 、 β_3 are the coefficients of the factors, μ , as the random error, represents other factors affecting the total volume of traditional import and export trade.

Use OLS to estimate parameters of the model and Eviews to make regression analysis. The results of regression analysis are below after correlation test of heteroscedasticity and sequence.

Dependent Variable: LOG(Y)
 Method: Least Squares
 Date: 04/06/18 Time: 23:04
 Sample: 2008 2018
 Included observations: 11

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-32.98720	6.459111	-5.107081	0.0014
LOG(X1)	-0.546364	0.138919	-3.932984	0.0057
LOG(X2)	5.790222	1.388890	4.168955	0.0042
LOG(X4)	1.330482	0.387240	3.435805	0.0109

R-squared	0.922163	Mean dependent var	3.032022
Adjusted R-squared	0.888805	S.D. dependent var	0.130987
S.E. of regression	0.043679	Akaike info criterion	-3.148612
Sum squared resid	0.013355	Schwarz criterion	-3.003923
Log likelihood	21.31737	Hannan-Quinn criter.	-3.239818
F-statistic	27.64395	Durbin-Watson stat	2.829706
Prob(F-statistic)	0.000297		

Figure 1 Results of regression analysis

The results of regression analysis are below:

(1) The coefficient of the total trade size of cross-border E-commerce is -0.55. This shows that when other variables remain constant, the elasticity value of the total volume of traditional import and export trade on the total trade size of cross-border E-commerce is 0.55, namely the total volume of traditional import and export trade decreases by 0.55% on average as the total trade size of cross-border E-commerce increases by 1%;

(2) The coefficient of consumer price index CPI is 5.8. This shows that when other variables are constant, the elasticity value of the total volume of traditional import and export trade on the total volume of consumer price index is 5.8, namely the total volume of traditional import and export trade increases by 5.8% on average as consumer price index increases by 1%;

(3) The coefficient of foreign direct investment is 1.33. This shows that when other variables remain constant, the elasticity value of the total volume of traditional import and export trade on foreign direct investment is 1.33, namely the total volume of traditional import and export trade increases by 1.33% on average as foreign direct investment increases by 1%.

As a result, the paper proposes that the total trade size of cross-border E-commerce, consumer price index CPI and foreign direct investment FDI correlate with the total volume of traditional import and export trade. Among them, when other variables remain constant, the total trade size of cross-border E-commerce is negatively correlated to that of traditional import and export, namely

the total trade size of cross-border E-commerce impacts traditional import and export trade to some degree and it even impedes traditional import and export trade.

6. Model revelation

(1) Traditional import and export trade flow needs to be optimized

One of the factors affecting China's import and export trade is cross-border E-commerce. Traditional import and export trade flow is complex, the intermediate links consume great labour and time, leading to a sharp rise in end product's price. However, the emergency of cross-border E-commerce fundamentally changes the mode and flow of cross-border trade, saving a lot of labour and time. To gain a competitive edge with its competition with cross-border E-commerce, traditional import and export trade needs to reduce its cost and threshold and provide more convenient trade channels.

(2) Enhance the competitiveness of China's traditional trade

Consumer price index CPI and foreign direct investment FDI are two major factors affecting China's import and export trade. The reason why consumer price index CPI is a major economic index is that it concerns two aspects. On one hand it's closely related to people's daily life, on the other hand it plays a positive role in social economic price system. Relevant government departments rely on this major index to analyze China's market economy and explore how to adjust market price. Foreign direct investment FDI's influence on a country's import and export trade is not independent. The rapid development of import and export trade size attracts more foreign investment which bolsters the import and export trade of the host country. Therefore, stable development of consumer price index CPI and foreign direct investment FDI should be maintained for the benefit of import and export trade.

(3) Cross-border E-commerce needs government support and investment

In the short term, cross-border E-commerce affects China's import and export trade. Such influence is negative. With economic globalization, China's growing comprehensive national strength and government's continuous support and investment in cross-border E-commerce, cross-border E-commerce develops rapidly. More and more small and medium sized enterprises and even individuals get involved in cross-border E-commerce. This impacts traditional import and export trade to some extent in the short term.

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