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EFFECT OF CROSS-BORDER E-COMMERCE ON INTERNATIONAL TRADE OF EMERGING COUNTRY IN THE CASE OF CHINA

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ABSTRACT

Recently, China's e-commerce has entered a period of rapid development. The government has also shown their support towards this advancement in the financial sector. Therefore, a study to analyze the effect of cross-border e-commerce on international trade of emerging countries in the case of China has been proposed. Pearson correlation coefficient is used as the research methodology to study the relationship between the two variables. There are not many literatures which focus on the impacts of e-commerce toward International trade. Cross-border e-commerce is of great significance to emerging countries' development. The result of this research shows that there is no significant relationship between cross-border e-commerce and international trade in the case of China. One possible cause of this is the lack of data as cross-border e-commerce is relatively new. Therefore, further research has to be carried out to find out the underlying relationship of these 2 variables which will help the government in taking beneficial measures for the country's future international trade development.

KEYWORDS

Cross-border e-commerce, international trade, China

1. INTRODUCTION

Cross-border e-commerce refers to different transaction subjects which belong to different customs territory, through e-commerce platforms, people can deal with payment and settlement. It's an international business activity and delivery of goods through cross-border logistics in order to complete the transaction. With the rapid development of e-commerce, China has gradually stepped into the international division of labor system. Traditional enterprise entities are no longer satisfied with the outdated offline system, which means that the development of e-commerce is becoming more and more important in international trade, especially cross-border e-commerce. According to the data from China E-Commerce Research Center released in 2016, the scale of cross-border e-commerce market in China was 6 trillion and 700 billion yuan, the increase was 24% compare to the same period last year. On the other hand, the import and export value of China's goods trade decreased by 0.9% in 2016.

Therefore, under the situation that traditional businesses are blocked and faced with development bottlenecks, changing the foreign trade development mode through cross-border electronic commerce will play an important role in transforming transaction mode in China. As the technical basis for promoting economic integration and trade globalization, cross-border e-commerce has a very important strategic meaning. Cross-border e-commerce not only breaks through the barriers between countries, but it also promotes international trade without the bondage of the national boundaries. Meanwhile, it is also causing great changes in world's economy and trade.

For businesses, cross-border e-commerce builds an open, multidimensional model of multilateral economic and trade cooperation has greatly widened the path to enter the international market, greatly promoted the mutual benefit and optimized the allocation of resources between the multilateral enterprise. For consumers, cross-border E-commerce makes it very easy for them to get information from other countries and to buy high quality commodity with lower price. Thus, the study on the impact of cross-border e-commerce on international trade will be of great significance to China's trade transformation and economic development.

2. LITERATURE REVIEW

In the 90s of last century, Toffler, an American scholar, predicted the development trend of e-commerce. He thought that the Internet

commerce, which was spawned by e-commerce, is bound to spread and develop rapidly all over the world. A research state in his studies "electronic commerce international trade strategy" first proposed the concept of "international trade" in this book, and further pointed out in the topic of electronic commerce in the international trade, that the era of electronic commerce will be a new important form, and he also analyzed its characteristics and application in the trade [1].

A researcher in the book "e-commerce and international trade", linked e-commerce with international trade and elaborated comprehensively how to use e-commerce technology in the field of international trade [2]. Some researcher stressed that the construction of e-commerce platform should be placed first for the development of foreign trade enterprises in China [3]. Other researcher suggests that e-commerce has changed the original mode of operation of international trade and brought new opportunities and contents for international trade [4].

Some researcher and force first proposed the concept of network economy, that the cross-border electricity supplier on behalf of the network economy and traditional economy is complementary to each other, the development of cross-border electricity supplier on behalf of the network economy, greatly promoted the development of international trade. A study also has stated that Cross-border e-commerce developed and there is a long-term equilibrium relationship between import and export trade, the development of cross-border e-commerce can increase the volatility of the import and export trade at the same direction [5].

3. THE CURRENT SITUATION OF INTERNATIONAL TRADE AND E-COMMERCE TRADE IN CHINA

3.1 International Trade

Internet refers to the trade in goods and services across the country, which is generally made up of import and export trade, so it can also be called import and export trade. International trade is also called world trade. Import and export trade can adjust the utilization ratio of domestic production factors, improve the international supply and demand relations, adjust the economic structure, and increase financial income.

Since 2009, China has become the largest exporter in the world and then it surpassed the United States in terms of total international trade for the first time in 2013. China has leaped into the world's largest trading

country [6]. However, the latest WTO data shows that after three years of being the world's first, China's import and export trade volume was overtaken by the United States in 2016. According to the data, after the global financial crisis in 2009, the import and export volume of foreign trade in 2015 fell again [7]. The General Administration of Customs stated that 2015 was a more complicated and grim year in the international and domestic situation since there is a new round of global financial crisis in China's goods trade.

Figure 1: Data from China National Bureau of Statistics

There are many reasons that lead to the drop of China's trade volume. From the point of view of export, the main reason is that the foreign demand was falling. Since 2008, the international financial crisis has destroyed the power of world economic growth, and the overall international economy has been weak, leading to the deep adjustment period of Global trade, thus inhibiting China's export growth. The data released by WTO shows that in the first 10 months of 2015, the global export value showed in dollar has dropped for more than 11%, which is another decline from the global financial crisis. From the point of view of import, it is mainly affected by the sharp fall in the price of international commodities [8]. In 2015, the NYSE light crude oil futures prices were up to \$50 a barrel at the beginning of the year, and at the beginning of 2016, the price was close to \$30 a barrel. The commodity CRB price index of the commodity Investigation Bureau fell to the level of the global financial crisis in 2008, in 2015. In 2015, the average import prices of iron ore, coal, finished products and copper and other commodities were also down, the year-on-year decline for each quarter was 39%, 21.8%, 38.3% and 17.1%, respectively.

In addition, as China's economic development has entered a new normal state, the domestic economy is facing greater downward pressure, and the growth of some commodity imports has also slowed down. In 2015, China's crude oil import volume increased by 8.8%, iron ore imports increased by 2.2%, and coal, copper and steel imports decreased by 29.9%, 0.3% and 11.4% respectively, all of which fell to varying degrees over the previous year.

Actually, China is now the second largest economy entity in the world and the largest trading country in the world, with its rising international status and significant influence [9]. In the future, China's foreign trade is going to be optimized and upgraded, and the transformed into a big foreign trade to a strong trade country. Thus, promotion of cross-border e-commerce is of great significance.

3.2 E-commerce Trade

E-commerce can be defined in a narrow and broad sense. In a narrow sense, e-commerce refers to sales of products and services through a platform with the help of Internet. The content of the transaction activity includes tangible products, such as cars, books, raw materials and so on and intangible products, like services such as online medical advice. In a broad sense, e-commerce refers to all business activities related to digital processing, which encompasses the cooperation with network [10]. It is not only a combination of hardware and software, but also between enterprises and enterprises, between enterprises and consumers, between enterprises, consumers and government through the exchange of information by the use of Internet to realize the digitization process.

The statistics of the Ministry of Commerce shows that from 2012 to 2016, the number of online shopping users in China has increased from 242 million to 467 million, nearly doubling. E-commerce trading volume increased from 8.1 trillion yuan to 26.1 trillion yuan, with an annual increase of 34%. Among them, the amount of online retail sales increased from 1 trillion and 310 billion yuan to 5 trillion and 160 billion yuan, an annual growth rate of 40%, contributing to the increase in total retail sales of social consumer goods from 17% to 30%. The number of

jobs directly and indirectly driven by the development of electronic commerce has increased from 15 million to 37 million. The "explosive" growth of China's e-commerce is first derived from the continuous promotion of the competitiveness of the various market subjects. Today, the key words of our country's e-commerce competition have changed from collage, price, and express speed into blending, creating and data. From the data and graph, a conclusion can be easily drawn, the total volume of e-commerce is increasing. Compared with the traditional trade, the new development mode is kept at a high level to promote China's economy. It is expected that in 2018, China's cross-border import retail e-commerce transactions will reach 421 billion 670 million yuan, an increase of 16.1%. It is expected that by 2020, the transaction scale of China's cross-border import retail e-commerce will reach 547 billion 720 million yuan.

Figure 2: Data from China National Bureau of Statistics

Figure 3: Data from www.analysys.cn

3.3 The Top 3 E-Commerce Enterprises in China

Figure 4: Data from www.analysys.cn

In the past 2017 double eleven Shopping Festival, Alibaba announced that it had contributed 168 billion 200 million yuan, and Jingdong also released double 11 sales data for the first time this year, with the order amount of 127 billion 100 million yuan. In the market share, the total turnover of Tmall was 47% higher in the 3rd quarter than in the same period of last year, and it increased by 7.4% in the 2nd quarter. It accounted for 59% of the market share. The total volume of Jingdong's transaction increased by 41% over the same period, with a growth of 3.9% in the 2nd quarter and a market share of 26.9%. Vip.com rose 24.6% over the same period, a 3.3% increase in the circle, accounting for third of the 3.2% share of the B2C market. Suning.com and Gome are taking up fourth and fifth of the market share of 2.8% and 1.3%, respectively. As far as Tmall is concerned, although after two years of low tide, the turnover has finally recovered in this year. However, the growth of e-commerce developments has begun to slow down overall. Both large and small platforms are facing the problem of flow exhaustion. For the e-commerce platforms, how to transform and upgrade is an urgent problem to be solved.

3.3.1 Tmall

"Tmall" originally named Taobao mall, is a comprehensive shopping website. In the morning of January 11, 2012, Taobao was officially renamed as "Tmall". In March 29, 2012, Tmall released a new image of Logo. In November 11, 2012, Tmall made a big profit from the bachelor's day, claiming a world record of 10 billion for 13 hours. Tmall is a new B2C (Business-to-Consumer) built by Jack Ma's Taobao network. It integrates thousands of brands and manufacturers to provide one-stop solutions for businesses and consumers. To provide 100% quality assurance goods, 7 days return without reasons and after sale service, and shopping integration and other quality services. In February 19, 2014, the Ali group announced that Tmall was officially launched for domestic consumers.

Tmall international is organized by Alibaba on 2014, February 19 and launched on the same day officially, Tmall international mainly for domestic consumers directly imported overseas original products. Tmall international has invited high quality merchants to find famous retail store brands in foreign countries and ranked second in cross-border import e-commerce platform in 2016-2017 years, accounting for 17.7% of the market share.

3.3.2 Jingdong

Jingdong, China's self-operated e-commerce enterprise, founder Liu Qiangdong serves as the chairman and chief executive officer of the Jingdong group board. Under the banner, there are Jingdong mall, Jingdong finance, patting network, Jingdong intelligence, O2O and overseas business department. A virtual operator license was officially awarded in 2013 and in May 2014, it was officially listed on the Nasdaq Stock Exchange. In January 4, 2017, China UnionPay announced that the Jingdong financial payment company was officially a member of the UnionPay union. In April 25, 2017, the Jingdong group announced the formation of a Jingdong logistics subsidiary. In August 3, 2017, the list of "the top 100 Chinese Internet companies" was published and Jingdong ranked 4th. Jingdong's global supply chain system of overseas direct purchase and brand direct supply has enriched the number of products on the platform to a large extent, ensuring that consumers' demand for shopping is satisfied. In the 2016-2017 China cross-border import market share, Jingdong's global purchase of 15.2% placed fourth.

3.3.3 VIP.com

Vip.com (VIPS) was founded in August 2008, with its headquarters in Guangzhou, and its website was launched in December 8th of the same year. Vip.com's main business for Internet online sales is branded discount goods, covering famous clothing, shoes, bag, cosmetics, mother and baby's goods, home and other major categories. In March 23, 2012, vip.com was listed on the New York Stock Exchange (NYSE). At present, vip.com has become the third largest electric business in China.

Vip.com has created an innovative business mode of "brand discount + limited time provided to purchase + genuine guarantee" in China and has continued to deepen the "brand selection + deep discount + limited hassle in buying" genuine sale mode. This model is credited as "online video". Vip.com is on line at 10 o'clock every morning and 8 o'clock every night, more than 200 genuine brand sales, with a minimum of 90 percent off discount, 3 days' time to rush to buy, which brings consumers a cost-effective online shopping experience.

Only through the "origin from international shipping duty-free import authentic" strategy, through the establishment of a team of buyers established selection advantage in the global 10 countries and regions, and through the establishment of the scale of procurement price advantage. In the 2016-2017-year cross-border import of e-commerce platform market share of the list of third, share ratio of 16.1%.

4. ANALYSIS AND DISCUSSION

4.1 Hypothesis

After previous literature review on several aspects of China, there is a need to perform statistical analysis on the data available to empirically test whether cross-border e-commerce has any relation to China's international trade. This relationship cannot be simply drawn from previous literature. Although both of them seem to grow in the past years, however the relationship between them is still vague. China's international trade has also received blows from recent global financial crisis. Overall the volume of trade had a sharp decrease in 2015.

On the other hand, e-commerce seemed to grow every year. However, we can see that the growth slowed down in 2015. In order to find out whether these 2 variables are correlated, Pearson correlation coefficient is derived using the statistical software package SPSS 23. Looking at the previous literature, it is logical to propose that there should be positive relationship between them. Since the higher amount of cross-border e-commerce volume should also lead to higher amount of international trade volume, the following hypothesis is proposed:

H0: Cross-border e-commerce is not related to international trade

H1: Cross-border e-commerce is positively related to international trade
Pearson correlation is used to determine whether the hypothesis will be accepted or rejected.

4.2 Pearson Correlation Coefficient

Pearson's correlation coefficient (r) is a measure of the linear association of two variables [10]. Since the data for China's cross-border e-commerce transactions are limited to the past 6 years starting from 2011 to 2016, the corresponding data of international trade will be used. The limitation of data is due to the fact that cross-border e-commerce data has not had a long history [11]. The concept can be said to be relatively new and it has only received a lot of attention in the past few years. The lack of trust and technology illiteracy might contribute to the lack of e-commerce adaption in the past. Many people did not trust that they can perform transactions online without face-to-face interaction as well as presence of physical product.

Therefore, the data found to be available only starts from 2011, 7 years ago. The data was also collected only until 2016 as data for 2017 will only be released in the upcoming few months in 2018. As for data of international trade, it is widely available and dated back to as far as 1960. However, the international data that will be used cover the same period of time as the data of cross-border e-commerce data, which is from 2011 to 2016. The data used will be percentage of merchandise trade in terms of GDP in order to cover the whole international trade transactions of China. Using these two data, Pearson correlation coefficient was calculated with the help of SPSS [12]. The table below shows the result.

Table 1: Correlations (Merchandise Trade % GDP)

		VAR00002	VAR00004
VAR00002	Pearson Correlation	1	-.980**
	Sig. (2-tailed)		.001
	N	6	6
VAR00004	Pearson Correlation	-.980**	1
	Sig. (2-tailed)	.001	
	N	6	6

** . Correlation is significant at the 0.01 level (2-tailed).

According to the results above, it can be seen that the result is significant, and the relationship is negative. The result is significant even in 0.01 level. This is the opposite of what was expected. The hypothesis proposed a positive relationship between the 2 variables. However, the test showed that the 2 variables have significant negative relationship. Possible explanation of this result is due to the indicator used to proxy international trade. Since the figures used are merchandise trade in terms of GDP, it is possible that the percentage was falling every year because the amount of GDP itself was increasing much higher than the increase of international trade. In this case, trade was not actually decreasing. Therefore, similar tests should be performed with different proxies of international trade.

One possible proxy other than percentage of merchandise trade in terms of GDP is the total volume of international trade. This is the sum of export and import. This total volume shows how large the amount of cross-border transactions is. By using total international trade as an indicator, the Pearson correlation coefficient was run once again to see the relationship between cross-border e-commerce and international trade. The following table shows the result.

Table 2: Correlations (Total International Trade)

		VAR00002	VAR00004
VAR00002	Pearson Correlation	1	-.046
	Sig. (2-tailed)		.931
	N	6	6
VAR00004	Pearson Correlation	-.046	1
	Sig. (2-tailed)	.931	
	N	6	6

The result is once again unexpected since it shows a negative relationship, however the relationship is not significant. It means that there's no significant relationship between cross-border e-commerce and international trade. This result further proves that the hypothesis proposed in this paper is rejected. A possible explanation for such result is that cross-border e-commerce promotes export but not import. In order to prove whether this might be the reason, another test is done by using export as the proxy. This is because China's e-commerce is growing very quickly. Therefore, it should increase the country's export rather than import. The table below shows the result of using only export as indicator of international trade.

Table 3: Correlations (Total Export)

		VAR00002	VAR00004
VAR00002	Pearson Correlation	1	.425
	Sig. (2-tailed)		.401
	N	6	6
VAR00004	Pearson Correlation	.425	1
	Sig. (2-tailed)	.401	
	N	6	6

According to the result above, although the relationship shows to be positive this time, however the result is not significant. Unfortunately, the hypothesis once again has to be rejected. The positive relationship shows that cross-border e-commerce and international trade do support one another. However, the relationship is not significant. Possible reason is due to the lack of long-term data as cross-border e-commerce can be considered new. The number of observation is only 6 years. As time goes on, cross-border e-commerce might grow even more and there will be more data available in the upcoming years. Larger set of data in the future might result into different conclusion. Regardless, in this paper, the hypothesis proposed is rejected. It means that there is no positive relationship between cross-border e-commerce and international trade in the case of China.

4.3 Discussion

It is very interesting that the hypothesis proposed has been rejected. If the Pearson correlation coefficient was proven to be positive and significant, further research can be done using more advanced statistical techniques such as linear regression. Linear regression will be able to show how much is the change in international trade when cross-border e-commerce has increased by a certain amount. Unfortunately, all of the results did not confer to the hypothesis proposed. Therefore, deeper literature review has to be carried out in order to understand the reasons behind this phenomenon. There are several possible reasons of this result. The first one lacks data as mentioned previously. The rather limited time span used in the analysis might not be sufficient to significantly show the existence of the relationship of these 2 variables. When more data on cross-border e-commerce are available, this analysis should be done one more time.

Another reason is because of the time frame chosen. Since China is affected by global financial crisis and thus the international trade has declined tremendously in 2015. It is possible that without cross-border e-commerce, the trade might have fallen even further. This means that e-commerce actually helped international trade, however other external factors caused by global financial crisis caused more damage. It is common for researchers to exclude years when certain special event has happened as these years can be considered as outliers. As more data are becoming available in the future, the year of 2015 and 2016 can be excluded from the analysis and another test of the relationship between these 2 variables can be performed.

According to the discussion and explanation above, it can be seen that further analysis should be done when more data are available in the future. Cross-border e-commerce is considered relatively new and therefore collection of larger set of data requires time. Regardless, as of

now, the research showed that there is no significant relationship between cross-border e-commerce and international trade in the case of China.

5. CONCLUSION

The development of e-commerce has been moving in a very quick pace. Nowadays, e-commerce companies such as Tmall, Jingdong and VIP.com are on the rise in China. A large proportion of the population is accustomed to use it in their daily life not only in the big cities, but the whole country. In the last two years, China is no longer the leader in international import and export trade because of many factors. Despite the gradual recovery of trade volume in recent years, the growth rate has slowed down significantly and is at a bottleneck. How to speed up the transformation of trade is an urgent problem that China needs to solve. On the contrary, in cross-border e-commerce, China's trade volume has been on the rise, and the international industry chain is leading the world. Therefore, it brings some hope to China's international trade. The Chinese government has also realized the unlimited potential of cross-border e-commerce and has shown their support by declaring a variety of policies and laws to encourage its development. Although the relationship between cross-border e-commerce and international trade was not proven in this research, however many of the academicians have focused on it. They think in terms of theory and practice, e-commerce has advantages over traditional trade. Especially in the era of China Internet plus, cross-border e-commerce plays a crucial role in helping the country's economy grow including its international trade. Therefore, more research on this topic should be carried out in the future.

There are several limitations to this study. The first one is the lack of data. The short time series used for analysis made it difficult to attain the most accurate result. The second one is the lack of in-depth analysis of the defects in e-commerce and possible upcoming trade bottlenecks that China may face. Cross-border e-commerce can be considered new, it has been in fashion only for less than a decade. Therefore, there is a big debate about its future. Finally, since each country has its own characteristics, analyzing China in this case may not be sufficient to represent all of the emerging countries.

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