

The Impact of Asia Pacific Integration on China's Agricultural Export Trade

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Abstract

With the increasing economic activity in the Asia Pacific region, the regional economic integration has become a great impetus to promote the rapid development of each countries' economy and to promote the global economic integration. Based on the cross section data, the paper uses the developed gravity model to analysis the influence of the Asia Pacific integration on the agricultural export trade of China, and the conclusion is that the influence of the Asia Pacific integration on the export trade of agricultural products is significant.

Key words: Asia Pacific integration; Agricultural export trade; Impact status; Gravity model; Policy suggestions

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INTRODUCTION

Since APEC was founded in 1989, the negotiations on the realization of economic integration in the Asia Pacific region have been carried out in full swing. At present, there are 21 members of the Asia Pacific integration, including China Hong Kong and Taipei. According to the relevant statistics, APEC internal member countries have signed the relevant regional trade agreements as many as 215, including 170 (nearly 70%) trade agreements between

member countries in the APEC, these trade agreements are overlapping, complex, directly lead to the Asia Pacific region's exports and investment environment has become more complex; Another big background environment is, currently, there are roughly three negotiations are leading the pattern of Asia Pacific economic integration, that is TPP (Trans-Pacific Partnership Agreement) which is led by America, RECP (Regional Comprehensive Economic Partnership) which is mainly led by ASEAN, and China, Japan and South Korea FTA negotiations, Especially in the United States led TPP negotiations, as the tools of United States to return to Asia Pacific region, the proposed trade standards and rules will be a direct threat and challenges to China's agricultural trade, At the same time, the United States in the Asia Pacific region's international image and trade status will be greatly improved, Whether it is from the international politics or simply from the international economy, China will face unprecedented pressure. It is really unknown that how much pressure China will be faced and what kind of impact will be produced by these factors to China.

Therefore, with the two big background, trade liberalization "double-edged sword" and the United States led TPP, China to carry out agricultural trade, take participation in agricultural competition in the Asia Pacific region will also undertake huge pressure and challenges while get some interests. So it is urgently to carry out the discussion on the Asia Pacific integration issues, and at the same time, the study of why to join the Asia Pacific integration, what deep influences may produce to China's economic development, and other related issues are also imminent.

1. REVIEW OF THE ASIA PACIFIC INTEGRATION

1.1 The Origin of the Asia Pacific Integration

The Asia Pacific region economic cooperation ideas

first appeared in twentieth Century 60, 70 years, the two major forces to promote economic development and cooperation in the Asia Pacific are the academic community, PAFTAD (Pacific Trade and Development Forum) and the PBEC (Pacific Economic Council). The establishment and development of the association of South East Asian Nations has provided the system blueprint, the great success of China's reform and opening up, and the stable thaw of relations with the United States have provided the conditions for the integration. 1980, the Asia Pacific regional economic cooperation goes toward the stage of laying foundations, the main sign for the establishment is the establishment of the PECC (Pacific Economic Cooperation Council), The Council was jointly sponsored by the two heads of state, Japan and Australia, and the main features are the combination of government

and business; In November 1989, the first foreign and economic ministers meeting held in Canberra, Australia, the Asia Pacific Economic Cooperation Organization (APEC) was established, which also create a successful start and a good platform for the development of the Asia Pacific economic integration.

1.2 The Main Forces to Promote the Development of the Asia Pacific Integration

At present, diversified power is promoting the development of the integration in the Asia Pacific region, however, three shares of power were working as the main function, they were TPP negotiations which without China's participation, RECP negotiations without United States, and China, Japan and South Korea Free Trade Area negotiations. See Table 1 for details.

Table 1
The Introduction of TPP, RECP, and China, Japan and South Korea Free Trade Area

Name	Establishment time and initial Members	Purpose	Number of member states
TPP negotiations	Signed in May 28, 2006, June 3, 2005 into effect; Initial members: Brunei, Chile, New Zealand, Singapore	The strategy tool of US to return to Asia Pacific, become the leader to make regional trade rules, and promote the establishment of the Asia Pacific Free Trade Zone	Brunei, Chile, Singapore, New Zealand, the United States, Australia, Peru, Malaysia, Vietnam, South Korea, Japan, Mexico, Canada
RECP negotiations	Launched in 2013; Initial members: ASEAN 10 countries, China, Japan, South Korea, Australia, India, New Zealand	To consolidate the leading role of ASEAN, deal with the challenges from the TPP, and the need to promote the economic development in East Asia	ASEAN 10 countries, China, Japan, South Korea, Australia, India, New Zealand
China, Japan and South Korea Free Trade Area	March 26, 2013, first round of negotiations; Initial members: China, Japan, South Korea	Expand the regional market, promote the integration of the 3 countries, mutual benefit and win-win, and promote economic integration in Northeast Asia and the Asia Pacific	China, Japan, South Korea

1.3 The State of Signing Regional Trade Agreement (RTAs) by APEC Member Countries

The process of economic integration in the Asia Pacific is a process of mutual agreement between the members of the APEC, The realization of the integration of the Asia Pacific means the formation of the net of trade agreements between countries. Therefore, the number of RTAs signed between countries more concentrated, shows that the process of the integration of the Asia Pacific is gradually accelerating. The state of signing RTAs among member countries in APEC and signing RTAs in the world are listed in Table 2.

According to WTO related statistical data, by September 2013, the number of RTAs signed by the member of APEC is 215, the number which signed by countries within APEC is 150, about 70% account for the total. The RTAs number signed by developed and developing countries is 69 and 146, accounting for 32.1% and 67.9%. We can see from the number showed by the table, the developed countries tend to be the leaders and guiders in the development of the Asia Pacific integration, but the main power to promote the rapid development of integration is the developing countries. The relationship between the interests of the developed countries and the developing countries in the trade has become the core issue of the Asia Pacific integration.

Table 2
The Number of RTAs Signed by APEC Member Countries (As of September 2013)

Country	The number of RTAs in effect	
	The number of regional RTAs	The total number of RTAs
Australia	8	8
Brunei	8	8
Canada	5	7
Chile	13	19
Mainland China	8	10
Hong Kong, China	2	3
Taipei, China	0	4
Indonesia	6	8
Japan	11	13
The Republic of Korea	7	12
Malaysia	9	12
Mexico	9	16
New Zealand	9	9
Peru	10	14
Philippines	6	9
Papua New Guinea	3	5
Russia	0	7
Singapore	13	19
Thailand	8	11
USA	8	13
Vietnam	6	8

2. THE PRESENT SITUATION OF THE IMPACT OF THE INTEGRATION ON CHINA'S AGRICULTURAL EXPORTS

What needed to be pay attention to is, in the United Nations commodity trade database HS encoding, agricultural products is divided into 24 Categories, but because the latter 14 kinds of encoding agricultural products are mostly agricultural products of industrial products, not the scope of this paper, therefore, this article selected the first 10 categories of encoding agricultural products. The first 10 categories encoding agriculture products are introduced in Table 3.

Table 3
The Introduction of the First 10 Categories Agriculture Products

Categories	The name of agriculture products
01	Live animals
02	Meat and edible meat offal
03	Fish and crustaceans, molluscs and other aquatic invertebrates;
04	Dairy produce; birds' eggs; natural honey; edible products of animal origin, not elsewhere specified or included;
05	Products of animal origin, not elsewhere specified or included;
06	Live trees and other plants; bulbs, roots and the like; cut flowers and ornamental foliage;
07	Edible vegetables and certain roots and tubers;
08	Edible fruit and nuts; peel of citrus fruit or melons;
09	Coffee, tea, maté and spices;
10	Cereals

We have sorted out the export trade data of all kinds of encoding agricultural products from 2004 to 2014, and calculated the corresponding growth rate. The figures are as follows:

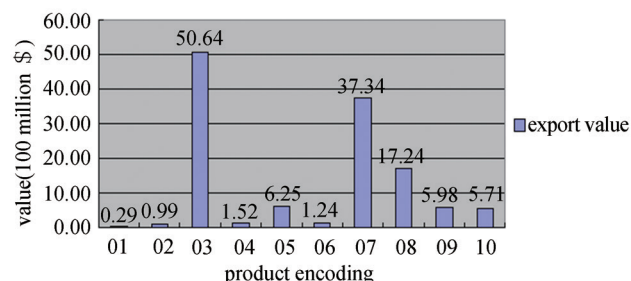


Figure 1
The Average Export Value (2004-2014)

Figure 1 shows that in our country's exports of all kinds of agricultural products, export trade volume in the top three of the product encoding is 03, 07 and 08, the trade value was 50.64, 37.34, and 17.24 billion U.S. Dollars; The lowest export value was 01, the trade value was only 0.29 billion U.S. Dollars, and the other is 02, 04, 06, the trade value was 0.99, 1.52 and 1.44 billion U.S. Dollars respectively.

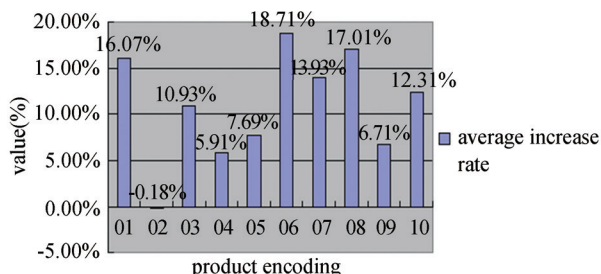


Figure 2
The Average Growth Rate (2004-2014)

According to Figure 2 which shows the export growth rate of each encoding product, among these products, 06 has shown the most rapid growth rate with 18.71%, and 02 was the lowest with the growth rate of -0.18%; 01, 03, 07, 08 product all had a growth rate over 10%, the rate of each of them were 16.07%, 10.93%, 13.93%, and 12.31%.

We can make Figure 3 by the combination of Figure 1 and Figure 2 to have a better show to each encoding product's export trade situation.

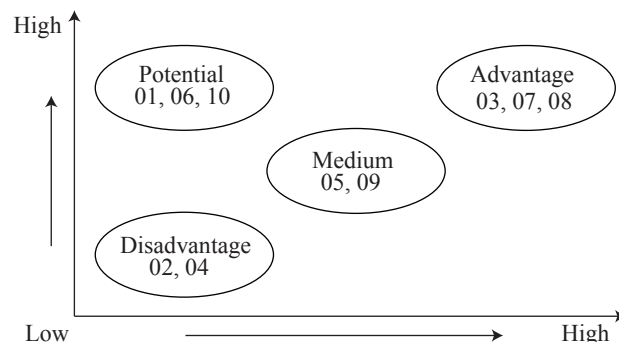


Figure 3
Competitive Status of All Kinds of Agricultural Products

In Figure 3, Products 03, 07 and 08 not only have a high export trade volume, but also have a relatively high growth rate, indicating that these products are in a higher share of trade, while international demands for imports of these kinds of product also have a lot of space, so we can judge these agricultural products as competitive advantage; Product 05, 09 have a medium export value, and their trade growth rate are also in general level, although they own the ability to meet some specific needs and keep a steady growth rate, their two indicators are in medium level, we can name this kind of products as competitive medium; 01, 06, 10 all have a low export level with the value is only 0.29, 1.24, and 5.71 billion U.S. Dollars, but they have relative high export growth rate of 16.07%, 18.71% and 12.31%, this kind of products which take a small value of export but have a rapid growth rate can be named as products of competitive potential; finally, in the product 02 and 04, the export volume and the growth rate of trade are all at a relatively low level, these two kinds of agricultural products can not meet the needs of the international market, and therefore can be determined as the competitive disadvantage of the product.

3. MODEL INTRODUCTION AND EMPIRICAL ANALYSIS

3.1 Data Sources

The statistical data used in the empirical analysis mainly includes the export trade data of each categories of product China export to other 17 major members in APEC, each country's GDP, each country's average tariff level exposed to products exported by China, the distance between China and other countries, each country's agriculture production value, the level of government outlay, the population and the exchange rate level. Data sources specific is shown in Table 4.

Table 4
Data Sources

Indicators name	Source
Trade value China exported to other countries	UNCOMTRADE: http://comtrade.un.org/
GDP of each country	IMF: http://www.imf.org/external/
Distance between China and others	www.timeanddate.com
Tariff level exposed to China	WTO https://www.wto.org/
Agriculture production value	FAO
Government outlay	http://faostat3.fao.org/home/E
Population	
Exchange rate	www.123cha.com

3.2 Index Selection and Model Construction

Traditional gravity model is used in this paper, and in order to meet the needs of analysis, some new indexes have been added into this model, and bear a new model. The basic form of traditional gravity model is:

$$EXP_{ij} = A(Y_i Y_j) / DIST_{ij} \quad (1)$$

Take a logarithmic form on both sides:

$$\ln EXP_{ij} = \beta_0 + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln DIST_{ij} + \mu \quad (2)$$

EXP_{ij} represents the trade value country i exported to country j; Y_i, Y_j are the GDP of country i and j; $DIST_{ij}$ is the distance between i and j (the distance of two countries' capital); β_0 is a constant, μ is the residual, and $\beta_1, \beta_2, \beta_3$ are

the coefficients of each variable, which means that in the condition that the other variables remain unchanged, the variable change in 1%, the percentage of the change of the dependent variable.

After taking reference to other literature, a series of new variables will be added in our paper:

- EXP_{cnij} : The trade value China export product j to country i, the dependent variable in this paper;
- Y_{cn}, Y_i : GDP of China and other countries;
- $DIST_{cni}$: The distance between China and country i;
- T_{cnij} : Country i's average tariff level exposed to product j exported by China;
- $TOARI_i$: Country i's total agriculture production value;
- $POPU_i$: The population of country i;
- $GOVEX_i$: The government outlay of country i;
- $EXCHGE_i$: The level of exchange rate;

Many variables are used in other literature's study, but partially were not brought in this paper because of the purpose of our study, and also, some variables which were not significant in other papers are not considered.

With new variables were brought in, a new model was constructed as follow:

$$\ln EXP_{cnij} = \beta_0 + \beta_1 \ln Y_{cn} + \beta_2 \ln Y_i + \beta_3 \ln DIST_{cni} + \beta_4 \ln T_{cnij} + \beta_5 TOARI_i + \beta_6 POPU_i + \beta_7 GOVEX_i + \beta_8 EXRAT_i + \mu \quad (3)$$

In this model, β_0 are the constant, and $\beta_i (i=1,2,3,4,5,6,7,8)$ are the coefficients of each variable, μ represents the residual.

According to the analysis below, the model (3) is our final model to carry out empirical analysis.

CONCLUSION

This paper compiles 10 cross section data about different categories coding products, the horizontal axis in each cross section data is 8 variables, and the vertical axis is seventeen member countries in APEC. We make regressions with Stata, during the operation "robust" order is used to reduce the residuals and "estat vif" order is used to eliminate multiple linear variables. The regression results are listed in Table 5.

Table 5
Regression Results of Integration's Impact to All Kinds of Products

Product/Variables	T_{cni}	Y_i	Y_{cn}	$DIST_{cni}$	$TOARI_i$	$POPU_i$	$GOVEX_i$	$EXRAT_i$
01	-2.82**	11.53**	-10.46**	-12.5**	13.21**	-8.44**	-7.8*	-0.9*
02	-2.4	--	--	--	--	-1.2	-0.05	-0.06
03	0.09*	--	5.9***	-1.8***	1.1***	--	--	-0.2**
04	-0.18**	-0.2*	1.5*	-1.74**	0.3*	-0.34**	0.82*	-0.16*
05	-0.21*	--	3.56**	-1.89*	0.84**	-0.19*	--	0.25**
06	-0.09***	--	3.26***	-2.23**	--	--	--	-0.02**
07	-0.4**	8.77*	--	-1.56***	0.36	0.44	--	0.028
08	-0.29*	2.2**	--	-2.09**	2.05***	--	--	-0.06
09	-0.41**	--	-2.4*	-1.67***	1.09**	--	--	-0.06*
10	-0.66***	--	1.43***	-3.33***	--	--	--	0.18**

Note. "--" represents the abandoned variables in the test; "*", "**", "***" means variables are significant at 10%, 5%, and 1% level.

T_{cni} are the core variable in our regression, which its coefficient can directly measure the extent of the impact of Asia Pacific integration produced to the agriculture export trade of China. On the whole, most coefficients are negative, means that the tariff other countries imposed to China is one important resistance factor, and explain from another angles, economic and trade liberalization in the Asia Pacific region really takes an very important meaning for the development of agriculture in China. Specifically, in 10 categories of agriculture products, 03 and 06 are exposed little impact by the Asia Pacific integration, with their coefficients are 0.09 and -0.09 which nearly can be seen as 0, the coefficients mean that during the trade liberalization, country i rise the tariff by 1% when he import product j from China, the trade value China export to country i will be increased or decreased by 0.09%, which is too small to pay attention to; However, the 01 and 02 kinds of agricultural products are the opposite, the coefficients value reached -2.4 and -2.84 respectively, according to the definition of elasticity, the absolute value of the two coefficients is greater than one, which means more flexible, indicating that these two kinds of agricultural products are influenced largely by the integration of the Asia Pacific; In the same sense, 04, 05 and 08 are -0.29, -0.21 and -0.18, which are less affected.; 07, 09 and 10 are -0.66, -0.41 and -0.4, respectively, which are exposed general affected.

According to the coefficient value, we can divided the extent of being impacted into four level, weak influence, small influence, medium influence, and huge influence. With the combination with Figure 3, we can make Table 6 to draw a conclusion to the Asia Pacific integration impact extent which exposed by all kinds of agriculture products.

Table 6
The Whole Status of the Asia Pacific Integration Impact

Being influenced extent/ competitive status	Weak influence	Small influence	Medium influence	Big influence
Competitive advantage	03	08	07	--
Competitive potential	06	--	10	01
Competitive medium	--	05	09	--
Competitive disadvantage	--	04	--	02

The first line in the table means the impact extent from weak to strong, indicates that the extent China's all kinds of agriculture products being impacted by the Asia Pacific integration; in the first column, the competitive is from strong to weak, shows that what competitive China's all kinds of agriculture are. In all, different kinds of products have different impacted status, only put the line and column together can we make a correct conclusion.

RECOMMENDATIONS

Firstly, Under the influence of the integration of the Asia

Pacific, China's export trade of all kinds of agricultural products has been increased by varying degrees, which also proves that China should face the economic integration and trade liberalization in a more open attitude, while promoting their own economic growth and also meet the needs of other countries in agricultural resources.

Secondly, China participates in agriculture export trade should not be maximize the expansion of the scale of production of various types of agricultural products, but according to the international market of agricultural trade competition to avoid weaknesses, draw on the advantages and avoid disadvantages.

In particular, China should continue to vigorously develop the aquatic products industry and the fruit industry, because they have sufficient competitive advantage and the minimum impact of the integration; To actively encourage the development of tree planting, because the industry has a huge competitive potential and can avoid the impact of the international market; To steadily develop other animal products and cereal products, which can occupy a certain market share while the largest possible to resist external shocks; To maximize the protection of the development of live animal breeding industry, which has a large international trade potential, but is very vulnerable to the impact from other countries.

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