Analysis on the Influence of Building the EU-China FTA

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Abstract: China and the EU are the mutual important partners in economic and trade cooperation. To promote the bilateral free trade is of vital significance to boost economic development transformation of both sides. This paper first analyzes the EU-China trade status from the perspective of trade scale, product structure and mechanism construction. Next, against the backdrop of Brexit, the GTAP (Global Trade Analysis Project) model is used to analyze the influence of signing the EU-China FTA on the macro-economy and relevant industries of both sides and the third party as well. Finally, this paper proposes policy suggestions for promoting the EU-China free trade level and the construction of the EU-China FTA.

1. Analysis on the EU-China Trade Status

1.1 Trade Scale

In recent years, the EU-China's import and export trade has witnessed continuously steady growth as a whole. Currently, China is the second largest trading partner only to the US for the EU, and the EU is China's largest trading partner.

According to the EU statistics, from 2005 to 2015, the EU-China trade scale increased from 212.8 billion euros to 520.8 billion euros, registering an annual growth of 9.3%; the proportion of EU's trade volume with China among EU's total value rose from 9.5% to 14.8%. During the same period, the EU's export to China grew from 51.7 billion euros to 170.4 billion euros, representing an annual increase of 12.7%; and the EU's import from China also increased from 161 billion euros to 350.4 billion euros, representing an annual increase of 8.1%. Thus, it can be seen that China plays an extremely important role in the development of the EU's trade, and the position has been increasingly strengthened over these years. Notably, the EU's export to China continued its rapid upward trend, indicating an increasingly prominent role of China in boosting economic development of the EU.

Chinese statistics showed that the EU-China trading scale increased from 217.3 billion USD to 565.8 billion USD from 2005 to 2015, registering an annual increase of 10%; while the proportion of China's trade volume with the EU among China's total value dropped from 15.3% to 14.3%. In fact, before 2010, the percentage was still on an upward trend. After that, it followed by a slowly drop. In 2013, it once plummeted to

13.4%. While in 2014 and 2015, it rose back to 14.3% again. It is apt to say that the EU has maintained a stable position in China's trade development. Currently, the EU is China's second largest export market and the largest import market. In 2015, China exported 356.4 billion USD to the EU and imported 356.4 USD from it, accounting for 15.7% and 12.5% of China's gross export and import value respectively, and registered an annual growth of 9.5% and 11.3% respectively since 2005.

Table 1 Basic Status of the EU-to-China Trade

Index	Unit	2005	2010	2011	2012	2013	2014	2015
The EU's Export to China	Billion euro	51.7	113.5	136.4	144.2	148.2	164.6	170.4
The Proportion of the EU's Export	%	4.9	8.4	8.8	8.6	8.5	9.7	9.5
The EU's Import from China	Billion euro	161.0	283.9	295.1	292.1	280.1	302.1	350.4
The Proportion of EU's Import	%	13.6	18.6	17.1	16.3	16.6	17.9	20.3
The EU's Trade with China	Billion euro	212.8	397.4	431.5	436.3	428.3	466.8	520.8
The Proportion of the EU's Trade	%	9.5	13.8	13.2	12.5	12.5	13.7	14.8
The EU's Trade Deficit with China	Billion euro	109.3	170.5	158.6	147.9	132.0	137.5	180.0

Source: Eurostat

Table 2 Basic Status of China-to-EU

Index	Unit	2005	2010	2011	2012	2013	2014	2015
China's Export to the EU	Billion USD	143.8	311.3	356.1	334.1	338.3	371.0	356.4
The Proportion of China's Export	%	18.9	19.7	18.8	16.3	15.3	15.8	15.7
China's Import from the EU	Billion USD	73.5	168.5	211.2	212.5	220.1	244.4	209.4
The Proportion of China's Import	%	11.1	12.1	12.1	11.7	11.3	12.4	12.5
China's Trade with the EU	Billion USD	217.3	479.8	567.3	546.6	558.3	615.4	565.8
The Proportion of China's Trade	%	15.3	16.1	15.6	14.1	13.4	14.3	14.3

China's Trade Surplus with the EU	Billion euro	70.2	142.9	144.9	121.6	118.2	126.6	147.0

Source: China Customs

To sum up, the interdependence degree of the EU-China trade is relatively balanced. China and the EU have an equivalent share in each other's trade value, and become the second largest export market and the largest import market to each other. This also lays a solid foundation for promoting the bilateral free trade. Although there is a certain gap in statistics between China and the EU, the EU-China trade volume maintained a growing trend on the whole, and the EU's export to China grew faster compared with the EU's import from China.

China's trade with the EU continued to maintain a "surplus" status. According to the EU statistics, the EU's trade deficit with China increased from 109.3 billion euros to 180 billion euros from 2005 to 2015. However, Chinese statistics showed that China's trade surplus with the EU increased from 70.2 billion USD to 147 billion USD during the same period. It can be seen that the EU statistics were much higher than those of China. The focus of this paper is not on statistical differences but on formation causes of the trade surplus and the influence on both sides. The final consumption goods dominated in China's export to the EU, with larger rigid demand and lower production capacity in the EU. If not from China, they also have to be imported from other economies. Thus, to the EU, the "Money" cannot be saved. Besides, China has long been known as the "World Factory". The production assembly of many global value chains and the final export link are achieved in China, while the EU is engaged in high-end R&D, branding, marketing and other links. China's trade surplus with the-EU is in line with the global division landscape. To the EU, Chinese products are "Cheap and Fine". The EU's import from China may obtain welfare benefits, including the economic welfare contributed by the export of the EU's enterprises in China to the EU. A major cause behind the huge trade deficit existing in EU's trade with China is that the EU has many limits in exporting to China. To improve free trade level between China and the EU, such as negotiating and signing the FTA, is conducive to narrow down the trade deficit scale.

1.2 Trade Structure

Firstly, electromechanical products in this category account for the largest share among the EU-China trade. Generally speaking, the category 16, 17 and 18 of HS Code belongs to electromechanical products. In 2015, electromechanical products, audio video equipment and its parts, and accessories (Category 16 of HS) takes up about 41.1% of China's export to the EU, and about 31% of China's import from the EU. The percentage is much higher than that of other product categories. This is a kind of typical industry chain trade. The EU mainly exports equipment facilities, integrates circuits and other parts to China, occupying the high-end links of industrial chain. However, China mainly exports mobile phones, laptops and other manufactured goods to the EU, and is in the middle and low-end links. The percentage of these products was declining

in the EU-China trade, and was 46.6% and 39.1% of China's total export and import from the EU respectively in 2010. It was 5.5% and 8.1% higher than that of products in 2015respectively. The first half of 2016 witnessed a further decrease. In 2015, the percentage of vehicles, aircrafts, ships and transportation equipment (Category 17 of HS), optics, medical and other instruments, clocks and musical instruments (Category 18 of HS) accounted for 3.9% and 3.6% of China's total export to the EU respectively, and accounted for 21.5% and 7.2% of China's total import from the EU respectively. Thus, for these two kinds of products, the EU was much more competitive. In 2015, the three kinds of products accounted for 48.5% of China's export to the EU and 59.7% of China's import from the EU in total, achieving 47.9 billion USD trade surplus.

Table 3 Product Structure of China's Import and Export to the EU

HS Category	Product Name	Proportion of Export Products (%)			Proportion of Import Products (%)		
		2010	2015	The First Half of 2016	2010	2015	The First Half of 2016
1	Live animals; animal products	0.81	0.75	0.77	0.73	1.57	2.36
2	Plant products	0.63	0.65	0.69	0.25	0.82	0.33
3	Animal and vegetable oil, fat and wax; refined edible fat and oil	0.02	0.04	0.04	0.06	0.15	0.14
4	Foods; drinks, wine and vinegar; tobaccos and tobacco products	0.67	0.76	0.81	1.12	2.75	2.90
5	Mineral products	0.67	0.44	0.41	1.62	1.91	2.78
6	Chemical products and other relative industrial products	4.39	4.56	4.95	9.10	12.65	13.13
7	Plastics andits products; rubber and its products	2.54	3.52	3.94	5.33	4.70	4.56
8	Leathers, furs and relevant products; luggage; catgut products	1.89	2.01	2.12	1.40	1.67	1.51
9	Wood and wood products; charcoals; soft wood; knitting products	0.89	0.85	0.89	0.32	0.59	0.67
10	Cellulose pulp; waste paper; paper, paperboards and relevant products	0.64	0.88	0.80	2.12	2.06	2.03
11	Textile raw materials and textile products	13.82	14.44	13.61	1.52	1.89	1.88
12	Shoes, hats, umbrellas; feather products; artificial flowers; human hair products	2.74	3.91	3.92	0.18	0.35	0.35

13	Mineral materials and products; ceramic products; glass and glass products	1.67	2.06	1.96	0.63	0.71	0.76
14	Jewelries, precious metal and products; artificial jewelries; coins	0.39	0.38	0.35	1.42	1.03	0.90
15	Base metals and products	5.71	6.79	6.61	9.74	6.42	5.97
16	Electromechanical, audio video equipment and its parts and accessories	46.57	41.08	40.84	39.10	30.96	30.29
17	Vehicles, aircrafts, ships and transportation equipment	5.70	3.86	4.24	18.65	21.54	20.83
18	Optical and medical instruments; clocks; musical instruments	3.02	3.57	3.87	5.98	7.21	7.57
19	Weapons, ammunitions and its parts and accessories	0.00	0.01	0.01	0.00	0.00	0.00
20	Miscellaneous items	7.21	9.42	9.08	0.69	0.94	0.96
21	Artworks, collections and antiques	0.01	0.02	0.02	0.01	0.07	0.06
22	Special trading items and unclassified commodities	0.02	0.00	0.07	0.02	0.00	0.03
	Total	100	100	100	100	100	100

Source: According to China Customs data

Secondly, labor-intensive products are the China's second largest export category to the EU. In 2015, textile raw materials and textile products (Category 11 of HS), shoes, hats, umbrellas and others, feather products, artificial flowers and human hair products (Category 12 of HS), plastic and its products, rubber and its products (Category 7 of HS), and leather, fur and relevant products, luggage, catgut products (Category 8 of HS) accounted for 14.3%, 3.9%, 3.5% and 2.0% of China's export to the EU respectively, which totaled at 23.9%, and increased by 2.9% compared with that in 2010. The four product categories above accounted for 2.1%, 1.9%, 4.7% and 1.7% of China's import from the EU respectively. All together was 8.6%, which was far lower than that of China's export to the EU. In 2015, the four product categories achieved a surplus of 67.1 billion USD in total. Thus, it can be seen that the electromechanical products and labor-intensive products are major sources of China's trade surplus with the EU, of which the labor-intensive products create more trade surplus.

Thirdly, the capital-intensive products are also a major part of the EU-China trade. In 2015, chemical products and other relative industrial products (Category 6 of HS) accounted for 4.6% of China's export to the EU and 12.7% of China's import from the EU, increasing by 0.2% and 3.7% respectively compared with that in 2010. The trend continued in the first half of 2016. To this kind of products, the technical content of the EU's product export to China was much higher than that of China's export to the EU Thus,, it can be an important growth point for the EU to expand its export volume to China in the future. In 2015, base metals and relevant products (Category 15 of HS) accounted for 6.8% of China's export to the EU and 6.4% of China's import from the EU. The former rose by 1.1%, while the latter declined by 3.3% compared with that in

2010, presenting a trend of "As One falling, Another Rising. The iron and steel products belonged to the Category 15 of HS and became s the focus of the EU-China trade frictions. The product category accounted for more than 5% of the EU-China trade volume. Therefore, whether the relative trade frictions can be handled or not plays an important role on the sustainable and sound development of the EU-China trade.

Fourthly, the primary products accounted for a relatively lower percentage in the EU-China trade. In 2015, live animals and animal products (Category 1 of HS), plant products (Category 2 of HS), animal and vegetable oil and fat, wax and refined edible oil and fat (Category 3 of HS), foods, drinks, wine and vinegar, tobaccos and tobacco products (Category 4 of HS), and mineral products (Category 5 of HS) accounted for 0.8%, 0.7%, 0.04%, 0.76%, and 0.44% of China's export to the EU respectively, and 1.6%, 0.8%, 0.2%, 2.8% and 1.9% of China's import from the EU respectively. The latter was all significantly higher than the former. This suggested that Chinese market has a higher approval on the EU's foods and drinks, and the relative products can be a major field for the EU to expand its export to China in the future.

1.3 Cooperation Mechanisms

In recent years, the cooperation between China and the EU or the EU members has been deepening and made positive progress in the free trade, investment facilitation and other areas. Particularly after "the Belt and Road Initiative" proposed, the EU-China economic and trade cooperation embraces new opportunities. For example, in 2015, the No. 815 China-Europe freight trains of China Central Bank increased by 1.7 times, among which were 265 return shift, registering an 8.5 fold increase. Another example is that the production capacity cooperation between China and the EU has been deepening. China and the EU members, including Britain, Germany and Spain reach a consensus on jointly exploring the third-party market, Hungary-Serbia Railway and a series of other major projects, are accelerated.

However, it should also be noticed that further deepening of the EU-China economic and trade cooperation is still faced with numerous difficulties and challenges, notably including the weak recovery of global economy , frequent bilateral trade frictions, the EU's refusal to recognize China's market economy status, etc. Looking forward to the future, it is necessary for the EU-China to reasonably tackle with these disputes and jointly confront with challenges to promote greater achievement in economic and trade cooperation.

2. Quantitative Analysis of the EU-China FTA Economic Influence

2.1 Model Specification

This paper analyzes and evaluates the influence of the EU-China free trade based on the *Global Trade Analysis Project (GTAP) 2012*. GTAP model belongs to the Computable General Equilibrium (CGE) model, which is built by Purdue University. It adopts production, consumption and government expenditure of different countries as

sub-models. After the data are input and various parameters are converted, the quantized data obtained are used to describe the trade relations among different countries. GTAP model can integrate various sub-models into a multi-country and multi-sector equilibrium model.

For the convenience of analysis, this paper conducts necessary integration of the GTAP model. This model consists of three regions, including China, the EU and the rest of the world. Among them, the EU includes Germany, France, Italy, Spain, Britain and the rest of the EU. The rest of the world mainly includes America, Japan, Korea, etc, 11 sub-regions in total. Such division can facilitate analyzing the influence of the EU-China free trade on the bilateral economic and trade development and its *"Spillover*" effect on the rest of the world. The model includes 45 industrial sectors and two categories of labor forces. It assumes that the market features perfect competition; the returns to scale of the production is constant; the producers minimize production cost; the consumers maximize product utility; all products and input elements are cleared on the market.

2.2 Scenario Setting

Firstly, the model is used for iterative computations in simulation and the "Base Scenario" is obtained under the condition of not impacting any exogenous variables. Then, the "Shock Scenarios" is obtained by impacting the tariff variables. The percentage change of various variables under the impact situation compared with the "Base Scenario" is used to describe the effect of the EU-China free trade.

During the current and future period, the EU-China Free Trade Agreement (FTA) is a major approach to promote the EU-China free trade. The process has become more complex because of Brexit. It needs to consider the three parties of China, Britain and the EU (excluding Britain) in analysis. Based on this, this paper sets three impact scenarios:

Impact Scenario 1: After Brexit, neither the China-Britain nor the EU-China FTA is established. Currently, there is still far from certainty about the negotiation process and result of "Brexit" between China and the EU. This paper makes a general hypothesis, that is, the tariff level between Britain and the EU increases to the WTO level. Under this scenario, the tariff level of both the China-Britain and the EU-China remains unchanged.

Impact Scenario 2: After Brexit, the China-Britain, not the EU-China, FTA is established. Under this scenario, the tariff level between Britain and the EU increases to the WTO level, the China-Britain tariff level is reduced to 0, and the EU-China tariff level remains the same. Impact Scenario 3: After Brexit, the EU-China, not the China-Britain, FTA is established. Under this scenario, the tariff level between Britain and the EU rises to the WTO level, the China-Britain tariff level remains the same, and the EU-China tariff level is cut to 0.

2.3 Macro Result Analysis

This paper focuses on analyzing four macro indexes, namely GDP, export, import and investment. The calculation results of the model are shown in Table 4. Below are the major conclusions:

Firstly, the negative influence of Brexit on the British economy far exceeds that on the EU economy. Generally speaking, if two economies sign the FTA, the bilateral tariff level can be lowered, which will stimulate bilateral trade growth, generate trade creation effect, and promote the bilateral economic growth. However, if the tariff level between Britain and the EU increases, it might cause counterproductive trade creation effect, which is not beneficial to the bilateral economic growth. Since the British economy is smaller than that of the EU, the same scale of trade reduction has a more significant influence on Britain. The calculation results of Impact Scenario 1 shows that the Brexit brings Britain's export, import, investment and GDP down by 5.66%, 9.22%, 4.4% and 0.09% respectively. While as to Germany, Italy, France, Span and other EU members, their export and import decreases are both less than 1%, and their GDP decreases stay at around 0.01% in general. Among them, Span and France suffer more from the negative influence, whose GDP both decreases by 0.02%.

Table 4 Influence of the EU-China Free Trade - Macro Economic Indexes (%)

Region	Impact Scenario 1				Impact Scenario 2				Impact Scenario 3			
	GDP	Export	Import	Investment	GDP	Export	Import	Investment	GDP	Export	Import	Investment
China	0.01	-0.04	0.19	0.16	0.17	0.23	0.44	0.26	0.99	1.92	2.07	0.83
Britain	-0.09	-5.66	-9.22	-4.4	-0.05	-5.19	-8.5	-4.07	-0.09	-5.78	-9.34	-4.45
Germany	-0.01	-0.41	-0.52	-0.1	-0.01	-0.43	-0.55	-0.1	0.02	-0.15	0.19	0.4
Italy	0	-0.56	-0.45	0.09	-0.01	-0.59	-0.48	0.1	0.04	-0.09	0.37	0.43
Spain	-0.02	-0.68	-0.68	-0.1	-0.02	-0.71	-0.7	-0.09	0.01	-0.45	-0.41	0.03
France	-0.02	-0.73	-0.62	0.06	-0.02	-0.75	-0.64	0.07	0.01	-0.53	-0.23	0.27
The Rest of the EU	-0.01	-0.49	-0.59	-0.26	-0.02	-0.51	-0.62	-0.26	0.02	-0.38	-0.31	0.08
Japan	0	-0.37	0.24	0.39	0	-0.4	0.17	0.38	-0.01	-0.57	-0.23	0.32
Korea	0	-0.11	0.1	0.26	-0.01	-0.17	0.02	0.25	-0.06	-0.39	-0.41	0.12
America	0	-0.24	0.39	0.32	0	-0.28	0.36	0.33	0	-0.45	0.27	0.36
The Rest of the World	0	-0.02	0.31	0.32	0	-0.04	0.27	0.31	0	-0.12	0.09	0.3

Notes: All numbers in this table stand for the percentage changes of various impact scenarios compared with the "Base Scenario". The GDP, export and import, and investment are all actual value.

Source: The author uses GTAP model for calculation.

Secondly, “Brexit” has a relatively limited influence on China and other third parties. The calculation results of “Impact Scenario 1” suggest that the export of China, Japan, Korea, America and the rest of the world will decrease by 0.04%, 0.37%, 0.11%, 0.24% and 0.02% respectively. The major cause behind the decrease is that “Brexit” impairs the economic growth of Britain and the EU. To the third parties, it means the shrinking of external market capacity, leading to the export decline with price unchanged. As the influence is indirect, the export decrease of China and other third parties is smaller compared with that of Britain and the EU. The data shows that the export decrease of Britain exceeds 5%, and the EU members exceed 0.4% as well. It should be noted that the import of China and other third parties all have seen growth. It is probably because the increasing tariff level of Britain and the EU forces part of their bilateral export to the third party markets, thus contributing to the imports of the third parties. The data shows the imports of China, Japan, Korea, America and the rest of the world will increase by 0.19%, 0.24%, 0.1%, 0.39% and 0.31% respectively. The import increase, though being limited as a whole, stimulates the investment growth of China and other third parties. The statistics show that the investment of China, Japan, Korea, America and the rest of the world will increase by 0.16%, 0.39%, 0.26%, 0.32% and 0.32% respectively. To sum up, the rising tariff level caused by “Brexit” is a double-edged sword to the third parties. It has negative influence on export decrease and positive influence on import and investment growth. The influence of Brexit on GDP of the third parties relies on the contrast relations of both sides interaction. The calculation results of model suggest that “Brexit” has so little influence on GDP of China and other third parties that it can even be ignored. Thus, it can be seen that the interaction of both sides is generally equal to each other.

Thirdly, the China-Britain FTA cannot make up for the negative influence of “Brexit” on Britain. The China-Britain Free Trade Zone can generate the trade creation effect. However, since the EU is the largest trading partner of Britain, the effect cannot cover the negative influence of increasing tariff between Britain and the EU. The calculation results suggest that under Impact Scenario 2, the GDP, export, import and investment of Britain decrease by 0.05%, 5.19%, 8.5% and 4.07% respectively. Though the decrease rate is cut by 0.04%, 0.47%, 0.72% and 0.33% respectively compared with “Impact Scenario 1”, the result is still negative.

Fourthly, the China-Britain FTA has a slight negative influence on the EU economy. Generally speaking, if two economies sign the bilateral FTA, the trade creation effect will be generated. In terms of the China-Britain FTA, the EU is the third party. Then, part of the Britain-EU and the EU-China trade will be transferred to the China-Britain, which further has a negative influence on economic development of the EU. The calculation results of the model show that, under “Shock Scenario 2”, the import and export of major EU members are all subject to the negative influence, but the decrease rate is within 1% and the GDP decrease rate maintains around 0.01%. It should be noted that, though the EU economy is affected slightly by negative influence, the decrease of major indexes under “Impact Scenario 2” is all greater than that under “Impact Scenario

1". In other words, the EU is hit by the double blow of "Brexit" and the China-Britain FTA. This can deal a heavy blow to the market confidence. If the scenario becomes real, the negative influence suffered by the EU economy might be greater than the calculated amount in this paper.

Fifthly, China's earnings from the EU-China FTA exceed those from the China-Britain FTA. This is a self-evident conclusion. The EU economy is much larger than the British's. In fact, trading products between China and Britain are similar to those between China and the EU. Therefore, China can benefit more from the conclusion of the EU-China FTA. The calculation results of "Impact Scenario 2" suggest that China's GDP, export, import and investment increase by 0.17%, 0.23%, 0.44% and 0.26% respectively. However, under "Impact Scenario 3", the four indexes above increase by 0.99%, 1.92%, 2.07% and 0.83% respectively. Admittedly, the gap is relatively larger. Since both "Impact Scenario 2" and "Impact Scenario 3" consider the "Brexit", the indexes of both scenarios are comparable. Meanwhile, it should be noted that high earnings often mean high cost. After all, the EU is not a sovereign state, so to conclude the EU-China FTA is far more difficult than to reach the China-Britain FTA.

Sixthly, the EU-China FTA can cover the negative influence of "Brexit" on the economic development of the EU to a large extent. The calculation results of "Impact Scenario 3" suggest that GDP growth of Germany, Italy, Spain, France, and the rest of the EU increases by 0.02%, 0.04%, 0.01%, 0.01% and 0.02%. However, under "Impact Scenario 1", the GDP of major EU members is on the decline. This suggests that the EU-China FTA can alleviate the impact of "Brexit" on the economic growth of the EU. The calculation results of investment are similar to GDP. Major EU members all achieve "From Negative to Positive". Particularly, the promoting effect of the EU-China FTA on Italy is especially obvious. Statistics show that, after signing of the EU-China FTA, the export of Germany, Italy, Spain, France and the rest of the EU will decrease by 0.15%, 0.09%, 0.45%, 0.53% and 0.38%, respectively. The decrease rate is cut by a large margin compared with that under "Impact Scenario 1". Statistics also show that, under "Impact Scenario 3", the import of Germany and Italy increases, while the export of Spain, France and the rest of the EU still suffers decrease, but its decrease rate is smaller than that under "Impact Scenario 1". The calculation results of import and export suggest that "Brexit" has a comparatively huge influence on the EU trade. Under "Impact Scenario 3", data show that import of Italy increases; while export of Spain, France and the EU decreases, but the decrease is smaller than that of "Impact Scenario 1". Calculation results of import and export suggest that Brexit has a greater influence on the EU trade, and the negative influence cannot be fully covered by the EU-China FTA.

Seventhly, for the EU and Britain, to enhance the level of free trade with China is conducive to create more job opportunities. The calculation results of "Impact Scenario 1" suggest that "Brexit" decreases the employment rate of Britain and the EU by 3.1% and 0.4%, about 979,000 and 802,000respectively in total, according to the present

statistics. Under “Impact Scenario 2”, the employment of Britain decreases by 1.6%. It is equivalent to increase employment for 474,000 people resulting from the China-Britain FTA. Under “Impact Scenario 3”, the employment of the EU increases by 0.3%, which means the EU-China FTA creates jobs for 1.4 million people.

2.4 Industrial Results Analysis

Table 5 lists the percentage changes of the actual output of 45 industries of China, Britain and the EU (excluding Britain) under the three impact scenarios in comparison with the “Base Scenario”. Based on the analysis above, the degree of concentration of the EU-China trade is higher. Here we choose several key industries to analyze the simulation results.

Firstly, the labor-intensive industry is the field from which China benefits most. Under “Impact Scenario 1”, the actual output of China’s textile, apparel and leather product industry decreases slightly. Under “Impact Scenario 2” and “Impact Scenario 3”, the actual output of three industries all increases. The increase rate of Impact Scenario 3 is higher than that of Impact Scenario 2. It suggests that, compared with the China-Britain FTA, the EU-China FTA has greater promoting effect on China’s labor-intensive industry. To the EU, the actual output of the three industries decreases more under Impact Scenario 3 than that under Impact Scenario 1. This suggests that “Brexit” brings slight losses to the EU’s labor-intensive industry. Meanwhile as China has an edge over the EU on the labor-intensive industry, the EU-China FTA will further expand the EU’s losses.

Table 5 Influence of the EU-China FTA - Actual Output of Industries (%)

Serial No.	Industries	Impact Scenario 1			Impact Scenario 2			ImpactScenario3		
		China	Britain	EU	China	Britain	EU	China	Britain	EU
1	Planting	-0.03	2.88	-0.06	0.01	2.53	-0.06	0.34	2.79	-0.42
2	Fish breeding and poultry raising	0	1.28	-0.11	0.06	1.18	-0.10	0.34	1.36	-0.06
3	Coal and mining	-0.01	0.89	0.12	-0.1	0.84	0.11	-0.44	0.85	0.03
4	Oil exploitation	-0.03	0.02	0.13	-0.13	-0.08	0.11	-0.51	-0.08	-0.06
5	Natural gas exploitation	0.19	0.47	-0.27	0.09	0.35	-0.28	-0.31	0.38	-0.46
6	Other mineral exploitation	-0.01	-0.67	0.14	-0.2	-0.74	0.15	-1.01	-0.63	0.17
7	Read meat manufacturing	-0.04	1.25	-0.24	0.31	1.06	-0.23	1.7	1.27	-0.11
8	Other meat manufacturing	-0.01	5.27	-0.48	0.14	4.96	-0.46	0.93	5.44	-0.54
9	Oils and fats	-0.02	-2.52	0.25	-0.16	-2.81	0.25	-0.71	-2.55	0.07
10	Dairy products	-0.02	1.85	-0.13	0.05	1.7	-0.12	-0.04	1.94	-0.13
11	Rice manufacturing	0	-5.09	-0.15	0.03	-5.06	-0.18	0.31	-5.11	-0.61
12	Sugar manufacturing	-0.01	1.21	0.16	-0.03	0.66	0.17	-0.06	1.24	-0.03
13	Other food processing	-0.01	0.38	-0.19	0.04	0.3	-0.19	0.76	0.35	-0.51
14	Tobaccos and drinks	0	0.08	-0.08	0.01	0.08	-0.08	0.1	0.07	-0.08
15	Textiles	-0.18	1.94	-0.23	0.46	0.49	-0.50	2.82	0.92	-3.03
16	Apparel	-0.15	2.08	-0.26	1.02	-1.44	-0.60	4.95	0.7	-4.12
17	Leather products	-0.05	-4.38	-0.05	0.83	-7.76	-0.49	5.07	-8.88	-3.83
18	Wood products	0.21	4.07	-0.38	0.11	3.56	-0.36	-0.26	4.38	-0.57
19	Paper making	-0.08	1.8	-0.16	-0.18	1.66	-0.14	-0.63	1.88	-0.20
20	Oil and nuclear fuel processing	0.01	-0.46	-0.14	-0.1	-0.34	-0.13	-0.52	-0.41	-0.01
21	Plastic, rubber and chemical products	-0.04	-2.57	0.24	-0.78	0.05	0.20	-4.02	-2.75	1.25
22	Nonmetallic mineral products	0.08	-0.31	-0.08	0.14	-0.56	-0.08	0.5	-0.27	-0.22
23	Ferrous metal smelting	0.01	-1.41	0.38	-0.12	-1.69	0.43	-0.72	-1.12	0.56
24	Non-ferrous metal metallurgy	-0.04	-6.85	0.14	-0.3	-6.92	0.16	-1.43	-6.91	0.10
25	Metal products	-0.04	0.5	-0.08	-0.09	0.29	-0.06	-0.37	0.59	-0.11

26	Auto manufacturing	0.06	-3.6	-0.13	-0.13	-3.13	-0.12	-1.87	-3.58	0.38
27	Other transportation equipment manufacturing	-0.13	2.83	-0.11	-0.28	2.32	-0.05	-0.67	2.83	-0.11
28	Electronic product manufacturing	0.32	-5.85	-0.26	0.34	-6.48	-0.41	0.33	-6.5	-1.33
29	Machinery equipment manufacturing	-0.06	0.91	0.14	-0.23	0.92	0.17	-1.13	0.95	0.63
30	Other manufacturing	-0.18	1.04	-0.11	-0.27	0.63	-0.07	-0.89	1.17	-0.31
31	Electricity	-0.01	-0.17	0.04	-0.1	-0.02	0.04	-0.53	-0.18	0.09
32	Coal gas supply	-0.09	0.1	0.47	-0.16	0.11	0.47	-0.44	0.06	0.21
33	Water supply	-0.01	0.54	-0.01	-0.02	0.51	-0.02	-0.06	0.52	-0.03
34	Architecture	0.15	-3.34	-0.07	0.24	-3.1	-0.06	0.8	-3.29	0.17
35	Trading	-0.01	0.27	-0.01	-0.02	0.26	0.00	0	0.27	0.00
36	Transportation	0.01	0.73	-0.15	-0.01	0.7	-0.14	-0.04	0.75	-0.12
37	Shipping	-0.07	1.5	-0.16	-0.16	1.33	-0.13	-0.47	1.66	-0.10
38	Air transportation	-0.04	1.19	-0.61	-0.14	0.98	-0.58	-0.43	1.27	-0.68
39	Communication	0	0.68	-0.03	0.04	0.58	-0.02	0.23	0.71	-0.08
40	Financial services	0.01	0.64	0.07	0.03	0.38	0.08	0.13	0.67	-0.03
41	Insurance	-0.06	0.45	0.10	-0.09	0.37	0.12	-0.13	0.47	0.01
42	Commercial services	-0.08	0.2	0.01	-0.07	0.12	0.02	-0.01	0.24	0.00
43	Culture & entertainment	-0.01	0.5	-0.05	0.06	0.43	-0.04	0.43	0.52	-0.07
44	Education, health and public services	0.02	0.22	0.06	0.17	0.2	0.06	0.88	0.2	0.03
45	Real estate	0.05	0.06	0.06	0.18	0.08	0.06	0.78	0.04	0.06

Source: Calculations based on the GTAP model

Secondly, the EU-China FTA will cover losses of the EU's auto manufacturing industry caused by Brexit. Under Impact Situation 1, the actual output of the EU's auto manufacturing industry declines by 0.13%. However, under Impact Scenario 3, it increases by 0.38%. Under Impact Scenario 1, China's auto manufacturing industry increases slightly by 0.06%, but decreases by 1.87% under Impact Scenario 3. Thus, it can be seen that, different from the labor-intensive industries, the auto manufacturing industry witness losses of China while benefits of the EU. Britain's auto manufacturing industry is a "Disaster-stricken Area" after Brexit. Its actual output decreases by 3.6% under Impact Scenario 1, and 3.13% under Impact Scenario 2. In other words, the China-Britain FTA cannot alleviate the huge impact suffered by the Britain's auto manufacturing industry after Brexit.

Thirdly, the ferrous metal smelting is an industry from which the EU benefits while China suffers losses. Under Impact Scenario 1, the actual output of China's ferrous metal smelting slightly increases by 0.01%, but decreases by 0.72% under Impact Scenario 3. The actual output of the EU's ferrous metal smelting industry increases by 0.38% under Impact Scenario 1 and by 0.56% under Impact Scenario 3. Since the steel smelting belongs to the ferrous smelting industry, conclusion of the EU-China FTA might possibly alleviate the EU-China trade frictions in the steel field. Under the three impact situations, the actual output of Britain's ferrous metal smelting industry all decreases. This suggests that Britain's industry will suffer from losses after Brexit.

Fourthly, the electronics manufacturing industry is an industry from which China benefits while the EU suffers from losses. Under Impact Scenario 1, the actual output of China's electronics manufacturing industry increases by 0.32%, and by 0.33% under Impact Scenario 3. The actual output of EU's electronics manufacturing industry decreases by 0.26% under Impact Scenario 1, and 1.33% under Impact Scenario 3. China's electronics manufacturing industry is at the medium and low-end of the global industrial chain. It is mainly responsible for processing and assembly and is characterized as labor-intensive. The analysis above shows that the EU-China electronic product trade has the characteristics of industrial chain trading. This suggests their economies are mutually complementary in this industry. Considering the low tariff rate of relevant products, the actual output decline of the EU's electronics manufacturing industry is mostly caused by the decline of affiliated industries instead of the intensifying competition between China and the EU. To Britain, the electronics manufacturing industry is another "Disaster-stricken Area" after Brexit. Under Impact Scenarios 1, 2 and 3, the actual output reaches up to 5% to 6%. Fifthly, the actual output of Britain's financial service industry shows considerable increases under the three impact scenarios. Currently, it is widely expected that Britain's financial service industry will suffer heavy losses after Brexit. This paper simulates influences of the EU-China free trade with the impact tariff variables. As the financial industry belongs to the service industry, it has no tariff. In other words, the model proposed in this paper cannot simulate factors like financial institutions withdrawing from Britain and

expected market changes. The simulated results are the tariff adjustment of the goods trade with the assumption of full market clearance. Under the model's assumption and impact scenarios, one possible explanation is that labor forces from part of Britain's damaged industries might shift to the financial industry after Brexit, thus increase the actual output of the industry.

3. Conclusions and Suggestions

Based on the analysis above, we obtain the following conclusions. Firstly, China and Europe have close trade relationships and similar trade dependency. They are the second largest export market and the largest import market to each other. Thus, to promote the free trade level is in response to the practical demand and can generate important gains as well. Secondly, the China's trade surplus to the EU is constantly expanding, which is an outcome of the in-depth development of economic globalization and in line with comparative advantages of both sides. Thirdly, electromechanical products and labor-intensive products are the most important part of the EU-China import and export. Chemical, food, drinks and other products have become major growth points of the EU's export to China. Fourthly, the calculation results of the model suggest that "Brexit" has a more significant impact on Britain than that on the EU, which impairs the effect of the EU-China and the China-Britain FTA to some extent. Particularly, the China-Britain FTA can hardly cover the losses of Britain caused by "Brexit". Fifthly, during the process of the EU-China free trade development, the industries China benefits most are the textile, apparel, electronics manufacturing, etc. To the EU, the profitable industries are the auto manufacturing, ferrous metal smelting, etc.

The policy suggestions are as follows:

3.1 Staying Firmly Rooted in the Present, Looking ahead to the Future and Carrying out Systematically

Building the EU-China FTA is a complex and systematic project. China and the EU should enhance their international production capacity cooperation under the framework of "the Belt and Road Initiative", particularly targeted at the third party. Besides, the EU should expand exporting its competitive products to China so as to lay a solid foundation for the construction of the EU-China FTA. Moreover, China and Britain should launch the early-stage research of FTA at an earlier date, rationalize the roadmap and schedule and strive for substantial progress within one decade.

3.2 Promoting the EU-China BIT to Reach an Agreement Earlier

Currently, BIT has been mostly integrated into FTA. The EU-China BIT negotiation was initiated in 2013. Currently, over ten rounds of negotiation have been carried out. It is suggested that China and the EU should accelerate their BIT negotiation pragmatically and strive to reach an agreement soon. In the long term, scholars may be encouraged to study the feasibility of building multilateral BIT.

3.3 Steadily Boosting the Construction of FTA under the Background of "Brexit"

It is suggested that Britain and the EU should handle the issue of "Brexit" properly and try to reduce the newly-increased economic and trade barriers. The "Brexit" negotiation is expected to last for years. During this period, the early preparations of the EU-China FTA negotiation can be promoted simultaneously. Meanwhile, Britain and the EU should participate in the EU-China FTA negotiation together, and enjoy the same preferences in rules for trade and investment, preferential margin and other aspects.

3.4 Strengthening the EU's Internal Coordination and Cooperating to Tackle the EU-China Disputes

The EU members' trade and investment relationships with China vary greatly. As to the construction of the EU-China FTA, stances and interest appeals of different parties are hard to unify. It is suggested that the EU should strengthen its internal coordination, and cooperate to tackle the EU-China trade balance, steel trade frictions, China's market economic status and other disputes properly.

3.5 China shall Build a new open economic system in the future

The institutional mechanism reform of China's open economy is still under way. China shall take full advantage of the EU-China BIT and the China-America BIT to deepen the reform and innovation of institutional mechanisms and accelerate the construction of new open economic system in investment, trade, service facilitation and other aspects.

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