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The impact of EU-Korea FTA on China's economic and trade:

Based on the Dynamic GTAP model[1]

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Abstract: EU-Korea FTA will come into effect in July 2011.European Union and South Korea is China's first and third largest trading partner. Therefore, the EU-Korea FTA will have an important impact on China's economy and trade. Based on the latest Dynamic GTAP model, this paper analyses the economic impact of the full realization of EU-Korea FTA in 2015 on China's macro economy and the various industrial sectors. The results show that China's overall economy was on the negative impact, but the magnitude is very small with only-0.007%. Compared with exports, imports fell more sharply, so China's trade balance has improved. From the view of output, China's agricultural products, agricultural products' processing industry and service sectors will suffer negative impact, while there is a certain role in promoting China's industrial sectors. From the view of regional product trade, the implementation of the EU-Korea FTA has a obvious diversion effect on China import and export trade, and China will be more inclined to export to EU market than Korean market. In contrast, there is a trend that the demand of importing China's agricultural products and processed products will transfer from the EU to South Korea, which to a certain extent, form a export substitution of South Korean to the EU .Finally, some policy implications are discussed.

Keywords: EU; Korea; FTA; Dynamic GTAP

I. Research Background

Along with the fast development of bilateral trade liberalization, the main trade partners of China are also actively promoting the establishment of Free Trade Agreements. After several rounds of negotiations, Korea-European Union Free Trade Agreement was finally concluded in July 13th, 2009, which would be officially come into effect in July, 2011. With EU and Korea the largest and the

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third largest trade partner of china, the Chinese government should pay attention to the effects of the Korea-EU FTA on the international trade and overall economy of china.

There has been lot of studies evaluating the economic effects of FTA, which can be divided into two categories according to research perspectives. The first category analyses the economic effects of china's direct participation of FTAs with abundant studies. An alternative of them concentrate on using GTAP model to insight into the impacts of global and regional trade libelization. For example, Huang and Young (2005) use the GTAP model to evaluate Global Trade Liberalization's influence on the economy of china as well as the whole world. Huang and jin (2010) also analysis the possible outcomes of the tariff concessions on non-agricultural products in Doha Round. While Cao (2010) studies CAFTA's function on the economy of its members and the world. The other alternative emphases on the outcomes of china's bilateral trade liberalization. Wang (2008) look into the economy effect of Shanghai Cooperation Organization FTA. Wei and wei (2009), as well as Tan (2010) analysis the bilateral macro economy movements of China-Korea FTA.

The second category concentrates on the influence of the FTAs of China's trade partners on our economy. Studies on this aspect are relatively lack. Li (2008) and Young (2010) simulate the effects of USA-Korea FTA on china's economy with GTAP model separately. Zhang (2006) calculate the results in cotton and clothing industry of china and the whole world after America cancelling the subsidy on cotton. Gao (2006) start from the trade relationship between East Asia and America continent, using GTAP model to analysis the possible influence of the America FTA on the economy of East Asia.

Overall, the current researches have two shortages. Firstly, most of the studies are based on the comparative static GTAP model, which can only applied to comparative static analysis and can't afford to update the database dynamically according to the time or establish simulative benchmark scenarios. So the comparative static GTAP model is obviously inappropriate to analysis the problem in a future year after the FTA fulfilled. Although some Chinese scholars have carried out some tentative studies putting some dynamic elements in the GTAP model, their efforts still have limitations. There is still a deep gap between their works and the real dynamic GTAP model. For example, the researches of Young (2005) and li (2008) combine recursive methods in the comparative static GTAP model, only updating the population, GDP, unskilled labor, skilled labor and natural resources to some future forecast year and conducting comparative analysis of policy simulation on this baseline.

Secondly, most of the previous researches are based on the GTAP database version 6. Alongside the development of trade liberalization, the total revenue and structure of international trade are changing continuously. From this point,

continuing to adapt the GTAP database V6 driven from the economy and trade relationship of 2001 obviously fail to reflect the real conditions. So, in this paper, we use the latest dynamic GTAP model and dynamic GTAP database version 7 (driven from 2004) to analysis how the EU-Korea FTA affects China's economy, trade and industries.

This paper will pain main attention on the following questions. How will the EU-Korea FTA influence the macro economy and social welfare of China? Will the imports and exports of China with other partners suffer negative impact? Will the industries within China get the same level of impact? Will EU market see Chinese products substituted by Korea's products on a large scale?

The remainder of this paper is organized as follows. In the next section, we give a description of the dynamic GTAP model and the experimental design. In the third section we proceed a series of simulations and analysis the results. Finally the last section summarizes and puts up some policy suggestions.

II. Research methodology and scenarios

The Dynamic GTAP model (GTAP-Dyn) is a recursively dynamic applied general equilibrium (AGE) model of the world economy. It extends the standard GTAP model (Hertel, 1997) to include international capital mobility, capital accumulation, and an adaptive expectations theory of investment.（这一段来自 Theoretical structure of dynamic GTAP）A salient technical feature of the new extension is the treatment of time. Many dynamic models treat time as an index, so that each variable in the model has a time index. In GTAP-Dyn, time itself is a variable, subject to exogenous change along with the usual policy, technology, and demographic variables.

The differences between GTAP-Dyn and the standard GTAP model can be generalized as follows. Firstly, compared with the standard GTAP model, GTAP-Dyn provides a better long-run analysis. Because the dynamic model needs to construct the baseline scenario as well as take the accumulation effects of varies factors into consideration. Secondly, in the standard GTAP model, capitals are only allowed to move between industries within a region, but not between regions. While in GTAP-Dyn, capitals can move across regions, which allows the investment allocation and endowment to respond to region-specific rates of return on capital. Thirdly, the adjustment for the rate of return needs time. The standard GTAP model takes it for granted that the adjustment of the rate of return in every country is instantaneous without any delay. While in GTAP-Dyn we describe a lagged adjustment, which is more realistic. Fourthly, GTAP-Dyn pulls in the adaptive expectations theory of investment. The investment movements depend on the changes of investors' expected rates of rates other than the actual rates. Their expectations of rates of return may be in error in the short-run, but stay consistent with the actual rates in the long-run. Fifthly,

GTAP-Dyn includes the capitals and gains of financial assets to achieve the dynamic links across years. (Ianchovichina and McDougall，2001；Walmsley and Strutt，2010)

This text uses the latest dynamic GTAP model and the GTAP database version 7, which is based on the Social Accounting Matrix of countries in 2004 and covers 113 countries and 57 sectors. According to the requirement of our research, we aggregate the database into 43 sectors and 4 countries/territories (China, European Union, Korea and Rest of World).

According to the aim of the paper, we develop 2 scenarios—the baseline scenario and the UN-Korea FTA scenario.

The baseline scenario: this paper uses the dynamic method to simulate the expected changes over the 2004-2015 period to obtain the baseline scenario. Apart from the assumption that all the countries will continue to execute the current policies, we also include Chinese's tariff adjustment according to the WTO Agreement during the 2001-2010 period and withdrawal of Multi Fibres Agreement (MFA) in January 2005 as well as EU enlargement.

The EU-Korea scenario: According to the EU-Korea Free Trade Agreement, in 3 years EU will reduce product tariff by 96%, Korea 99%. In 5 years, both countries will cancel bilateral industrial product tariff. [3]EU will approve Korea's retention of export tax rebate policy. We also assume EU and Korea' tariff system with other countries unchanged.[4]

III. Results and analysis

III.A Macro economy and welfare

III.A.a China suffers a slight negative impact in GDP and welfare.

Compared with the baseline scenario, in 2015 China's real GDP will decrease by 0.007%, welfare by 964.5 million US dollars. Overall, the influence is not significant. That is mainly because China's capital stock suffers a relatively small change (-0.014%[5]). There are two reasons of this relatively small decrease in China's capital stock: On one hand, the trade protection between Europe and Korea concentrates on the agricultural products other than the industrial

[3] In general, there are 2 paths to reduce tariff to zero: Path 1, take the identical cut down rate each year. Path 2, take the identical reduction margin each year. In the final results the difference between the two paths are very slight. In this paper we use the second reduction path.

[4] In the tariff reduction procedure, we don't take the sensitive products (special products) in to particular consideration and believe all the products, including agricultural products, industrial products and services, are all faced with full tariff cuts.

[5] In the dynamic GTAP model, in the long run, we assume that a country/region has fixed amount of labor and land, while the capital stocks can be flexible. So the changes in the long run economy development are caused entirely by the changes of capital stocks.

products. So tariff reduction has less effect on the industrial products of higher capital intensity. On the other hand, agricultural products trade takes only a small proportion in China-EU and China-Korea trading. As a result, the EU-Korea FTA has a relatively small impact on China's overall economy.

III.A.b Compared with the consumption expenditure, China's export and investment demand decrease greatly.

China's export demand decreases by 0.04%, investment demand by 0.05%. While the private consumption and government expenditure only fall by 0.01% and 0.02%. the export subside because the realization of the FTA raise the relative prices of China's export products to the FTA region, which decrease the demands towards China's products. In the investment aspect, China mainly exports labor-intensive products rather than capital-intensive products. So after the shock the price of capital falls relatively insignificant, decreasing the return on capital and retraining investment demand. As the decrease of GDP lead to the decreases in private and government expenditure and the worse terms of trade lead to a greater fall in purchasing power, private and government expenditures suffer a greater decline than the develonment of economy. The welfare decomposition shows that the decline of China's GDP mainly results from the shrinks of investment and investment demands.

III.A.c The real exchange rate depreciation leads to an improvement in China's trade balance as well as a deterioration in terms of trade.

China' input prices decrease more than the world average. As a result, China's export prices fall while import prices rise, leading to the terms of trade falling by 0.04%. Besides, due to the decrease of investment demand, China's real exchange rate depreciate, which improves the trade balance. The model simulation result shows that although both the exports and imports fall, the imports fall on a larger scale. As a result, the FTA agreement will improve China's trade balance to some extent. The welfare decomposition also indicate that the terms of trade has a positive effect on GDP.

III.A.d EU-Korea FTA will benefit Korea's welfare and economy development better.

Compared with the baseline scenario, in 2015, the GDPs of EU and Korea develop by 0.006% and 0.183%, which shows that Korea enjoys a greater economy development than EU. The same situation can be seen in the welfare aspect. In 2015, the welfares of EU and Korea be improved by 827.1 million dollars and 2395.7 million dollars, indicating that Korea's welfare improvement is as 3 times large as EU's. In conclusion, the realization of Korea-EU FTA benefits the economy and welfare of Korea better.

III.A.e The prices of land as an endowment in China and Korea fall greatly.

In the GTAP model, land, regarded as an insensitive endowment, is supposed only to be used

in agriculture and mining industries. The redistribution of land among industries is not completely mobile so the land prices in industries are different. The simulation result shows that the land prices of China and Korea fall greatly due to the severer damages in agriculture industry. (Table 1.1)

Table 1：compared with the baseline scenario，the main macro-parameters changes in the 2015 policy simulation

	China	EU	Korea
welfare[6] (million $)	-964.5	827.1	2395.7
Real GDP（%）	-0.007	0.006	0.183
investment（%）	-0.05	0.07	1.50
Private consumption（%）	-0.01	0.01	0.30
Government consumption（%）	-0.02	-0.01	-0.08
exports（%）	-0.04	0.07	0.91
imports（%）	-0.11	0.11	2.08
Net exports（million $）	174.0	-1407.0	-1799.2
Input prices（%）			
Land	-0.167	0.330	-2.755
Unskilled labor	-0.039	0.043	1.033
Skilled labor	-0.046	0.046	1.046
capital	-0.027	0.039	0.812
Othermain parameters（%）			
Rate of return on capital	-0.004	0.032	0.359
Capital stock	-0.014	0.010	0.231
CPI	-0.044	0.016	0.133

Data resource：the dynamic GTAP model simulation results.

III.B The industry level influences on China

Overall, the signing of the Korea-EU FTA has no great impacts on industries of China, although significant differences can be seen among different industries.

[6] In this paper the welfare change refers to the equivalent (EV) changes, which means that faced with the price level in the baseline scenario, the consumer should pay how much money to get the same utility level under the policy simulation scenario. In this model, the unit of the EV change is calculated in million dollars under the constant price of 2004, which is identical to the unit of the GTAP V7 database.

III.B.a agricultural products, agricultural product processing industry and service industry suffer negative effects.

As the simulation results of 2015 show, the agricultural products, agricultural product processing industry basically get negative impacts. The output decline in agricultural products is mainly due to the decline in the demand for agricultural product processing industry. Among agricultural products, Other cereals and other crops suffer the most with output decreases by 0.11% and 0.16%. Other cereals fall due to a great shrink in export demand (-1.43%) and the output decline in other food industry (-0.27%), as other cereals are mainly used as the intermediate inputs of other food industry. Other food industry also suffers a larger negative impact because of its relatively high share of exports. Other agricultural products suffer relatively small effects, between -0.01% and -0.05%. It is noteworthy that the wool industry develops by 0.4%. This is because import price of wool from EU to China rise, raising the overall import price of wool to China and stimulating the demand for domestic wool production. The output of oil crops and forestry basically stay the same.

In agricultural product processing industry, vegetable oil industry and other food industry decrease significantly, by 0.17% and 0.25%. Other food industry has a relatively high share of exports and a larger decline in exports, therefore falls greatly in output. As the most intermediate input in other food industry (taking up 60%), vegetable oil industry also suffers a negative impact in output. While the dairy industry's output expands because the relatively high price of the import dairy products simulates the domestic produce. Other service is mainly used for investment goods (39%), therefore, decline in investment demand also reduces the use of other service.

III.B.b the Korea-EU FTA promotes the industrial products to some extents.

According to the Table 2, most of the industrial products' exports expand by 0.1% to 0.6%. In general, the positive influences are relatively small. The is mainly because that the put puts in downstream industries have smaller decline and that the domestic product prices decrease. Different from other industrial products, the outputs in clothing industry and motor vehicle industry only fall by 0.06% and 0.05%, as the share of exports in clothing industry is higher (60%) and the motor vehicle industry enjoys both a higher share of exports (11%) and a decrease in exports (-0.33%).

For the EU and Korea, the realization of Korea-EU FTA has a great negative effects on Korea's agricultural products and agricultural product processing industry, while EU benefit in these two industries. On the contrary, in the industrial industry and service industry, Korea benefit while EU suffer some loss. (Table 2)

Table 2： The effects of Korea-EU FTA on China's outputs and prices in 2015(%)

Products	outputs			prices		
	China	EU	Korea	China	EU	Korea
Agricultural						

products						
Paddy	-0.03	-0.20	0.20	-0.08	0.03	-0.65
Wheat	-0.01	0.02	-0.43	-0.06	0.04	-0.63
Other cereals	-0.11	0.12	-1.55	-0.12	0.06	-1.79
Vegetables and fruits	-0.05	0.04	-0.14	-0.09	0.05	-0.97
Oil crops	0.00	0.02	-0.07	-0.07	0.05	-0.71
Sugar crops	-0.01	0.17	-1.45	-0.08	0.07	-0.76
Plant fiber	-0.01	-0.01	0.53	-0.06	0.05	-0.35
Other crops	-0.16	0.11	-0.10	-0.14	0.07	-0.91
Cattle and sheep meat	-0.03	0.16	-4.24	-0.10	0.07	-1.97
Other animal products	-0.01	0.34	-4.14	-0.08	0.09	-2.12
Raw milk	-0.03	0.15	-2.80	-0.10	0.07	-1.57
Wool	0.04	-0.41	0.60	-0.05	0.02	-0.28
Forestry	0.00	-0.04	-0.68	-0.06	0.05	0.19
Fishing	-0.05	0.02	-0.85	-0.11	0.10	-1.31
Agricultural product processing industry						
Livestock products	-0.02	0.01	2.31	-0.05	0.04	-1.62
Other meat products	-0.05	1.04	-10.06	-0.07	0.05	-1.47
Vegetable oil	-0.17	0.06	-1.34	-0.05	0.03	-0.24
Milk products	0.02	0.21	-3.92	-0.06	0.04	-1.18
Processed paddy	-0.03	-0.19	0.12	-0.06	0.03	-0.56
Sugar products	-0.03	0.06	-1.76	-0.05	0.03	0.10
Other food industry	-0.27	0.29	-4.39	-0.06	0.04	-0.83
Beverage, alcohol and tobacco	-0.01	0.08	-0.32	-0.04	0.03	-0.44
Textile	-0.03	-0.26	3.89	-0.03	0.00	0.29
Leather	-0.05	0.03	3.25	-0.04	0.02	-0.28
Wood products	0.01	-0.03	-1.08	-0.03	0.03	0.31
Industrial products						
Clothing	-0.06	0.01	1.89	-0.03	0.01	0.23
Coal	0.01	-0.10	0.28	-0.08	0.05	-0.07
Oil	0.06	-0.20	0.42	-0.04	0.01	-0.12
Natural gas	0.02	-0.26	0.28	-0.05	-0.01	-0.02

Other mineral products	0.03	-0.03	-0.54	-0.04	0.05	0.15
Paper	0.02	-0.01	-0.85	-0.03	0.03	0.53
Oil and coal products	0.01	0.02	-0.09	-0.03	-0.01	0.06
Chemical products	0.02	0.03	-0.18	-0.02	0.02	0.19
Mineral products	0.00	0.04	-0.64	-0.03	0.03	0.49
Steal	0.06	-0.04	-0.85	-0.03	0.03	0.43
Nonmetal products	0.03	0.03	-1.20	-0.03	0.02	0.17
Metal products	0.03	-0.02	-0.49	-0.02	0.03	0.55
Motor vehicle	-0.05	-0.48	7.01	-0.02	-0.02	0.29
Other transportation	0.04	-0.06	-1.43	-0.02	0.02	0.42
Electronic equipment	0.00	-0.19	-0.09	-0.01	0.01	0.21
Machinery equipment	0.04	0.15	-1.22	-0.02	0.02	0.39
Other manufactures	0.03	0.00	0.73	-0.03	0.03	0.39
services	-0.01	0.00	0.14	-0.03	0.03	0.64

Data resource：the dynamic GTAP model simulation results.

III.C The influences on international trades in industry level

The Korea-EU FTA has a negative impact on China's imports as well as exports. The simulation results shows that in 2015, China's total imports fall by 0.11%, while total exports fall by 0.04%. But the reactions among industries have significant differences.

On the export side, agricultural products industry and agricultural product processing industry get greater effect. Paddy (-2.8%), wheat (-1.3%), other cereal (-1.4%) and other food and beverage get the hardest shock, while the other agricultural products and agricultural product processing industry get relatively small impact (mostly between -0.8% and 0.8%). The export of industrial products get even slighter fluctuation, generally between -0.25% and 0.25%. (Table 3) From the contribution rate point of view, other food and beverage industry's export contribution rate falls mostly greatly (-0.023%), which contributes to more than 50% of the total exports. Although the fluctuation of industrial product industry is slight, its contribution to the total exports is greater than agricultural product and its processing industry due to its higher export share.

Different from the exports, the imports of most industries suffer a relatively small negative impact. Among them the natural gas industry suffers the most great decrease (-0.41%),

while the other industries generally fall by 0% to 0.3%. There are two reasons for the decrease in natural gas industry: Firstly, the domestic and imported natural gas has little difference in quality. So in the model, the substitution elasticity of the natural gas is 17.2, while the other products' average substitution elasticity is merely 3.1. Secondly, the import share of natural gas is very small so the substitute effect due to a fall in the import price is relatively great. Different from other import products, other minerals' import increases by 0.0117%, as the productions of steal and other metal increase, which stimulate the import demand for mineral products. The proportions of other minerals as intermediate inputs in the steel industry and other metal industry are 40% and 18%, so the production increases in the steel industry and other metal industry give rise to a growth in the production of other mineral products. The industries contributing the most to the imports are machinery and equipment (-0.037%), chemical products (-0.015%) and electronic equipment (-0.014%). Generally these three industries take two thirds of the total exports.

In the regional level, the realization of the FTA has an obvious trade diversion effect on China's exports. China's exports has a bias on the EU market other than the Korea market, which leads to a trade diversion from Korea to EU in export. (Table 3) The simulation result shows that most of China's export products to EU have increase tendency, between 0% and 1%. One reason is that the input prices of EU raise the domestic products prices and make China's products more competitive in EU market. The other reason is that EU's the tariff cut towards Korea decreases the composite import prices, which stimulates EU's total import demands. Compared to industrial products and services, the exports of agricultural products and the related processing industry grow faster, due to the relative change in land rent. In the simulation result, the land rent in EU rises (0.33%), while that in China falls greatly (-0.167%), which decreases the relative prices of agricultural products and related processing products and stimulates the import demands for China's agricultural products. But the exports of rice, textile, clothing, electronic equipment and motor vehicle fall respectively by 0.03%, 0.85%, 0.09%, 1.11% and 0.34%. This is because EU holds high tariffs to Korea before the FTA assigned, especially the tariff rates of rice, textile and clothing are respectively 46%, 7.9% and 10.6%. So, the tariff reduction lowers Korea's export prices greatly and finally replaces China's export demands.

But why Korea doesn't replace China's exports to EU on a larger scale? That is because Korea only takes a small proportion in EU's imports, especially in agricultural products and related procession industry. The dynamic GTAP database indicates that Korea only accounts 1.3% in EU's total imports, while China takes 10%. Among that, Korea's agricultural products and related processing products are hardly exported to EU market. As a result, EU's reducing tariff to Korea has merely no impact on China's exports to EU.

The assignment of Korea-EU FTA influences China's export structure of agricultural products and related processing products. The simulation suggests that china tend to import from Korea other than EU, which to some extent becomes export substitution.

In general, EU's exports to China have a decrease trend and agricultural products fall greater than industrial products. The reason for EU's exports decrease has two main reasons: firstly,

the slowdown of China's economy development decreases China's demands for imported products; Secondly, EU's input prices rise leads to a increase in its export products cost, which strikes EU's exports toward China. As the same, due to EU's land rent rise brings its agricultural product prices up, so EU agricultural products' exports towards China suffer a great decrease. But the motor vehicle and electronic equipment have grown in export, because the demand for EU's motor vehicle shrinks and drags its prices down by 0.019%, while the export price of Korea's motor vehicle rise by 0.28%. As a result in China market we can see EU motor vehicle replaces Korea's. As for the electronic equipment, its price in EU rises by 0.012%, which is still much smaller than Korea (0.20%). Besides, Korea's motor vehicle and electronic equipment occupy large market shares in China (respectively 12% and 17%), so the substitution effects are also relatively significant.

Unlike EU, Korea's agricultural products exports to China grow rapidly, among which the exports of cattle and sheep meat product, other meat product and raw milk grow by more than 10%. In general, the reason is that Korea's land rent falls greatly (-2.67%), which decreases the export prices and improves the competiveness of Korea's agricultural products in China market. But Korea's forestry, sugar products, textile and wood products exports to China suffer a falling tendency due to the absent use (sugar products, textile and wood products) or less use of land(forestry 19% compared to 57% as the average share of land in agricultural products) and that causes the price distension. Unlike the agricultural products, the industrial product exports of Korea to China decrease greatly. The main reason lies in that Korea's labor cost has a significant rise and that raises the prices of industrial products and services, which harm Korea's industrial products exported to China. While the exports in oil industry rise by 0.915%, as Korea's oil export price falls and oil from Korea only takes a small part in China's market.

Table 3 ： The effects of Korea-EU FTA on China's products trade in 2015(%)

Products	Total exports	Total imports	China's exports		EU	Korea
			EU	Korea	China's imports	
Agricultural products						
Paddy	-2.845	-0.192	0.745	-3.192	-0.946	6.206
Wheat	-1.325	-0.132	0.813	-4.218	-0.765	5.444
Other cereals	-1.434	-0.176	0.541	-4.250	-0.399	4.563
Vegetables and fruits	-0.094	-0.129	0.430	-3.570	-0.535	2.893
Oil crops	0.055	-0.082	0.383	-0.673	-0.399	2.856
Sugar crops	0.461	-0.141	0.728	-0.387	-0.721	3.807
Plant fiber	0.464	-0.104	0.312	3.390	-0.449	1.517
Other crops	-0.666	-0.269	0.988	-7.722	-0.846	5.269
Cattle and sheep meat	0.241	-0.165	0.762	-4.045	-0.526	7.980
Other animal products	0.263	-0.098	0.750	0.798	-0.381	5.291

Raw milk	0.630	-0.292	1.034	-2.587	-0.933	11.769
Wool	0.385	-0.134	0.417	1.767	-0.697	3.071
Forestry	0.160	-0.082	0.323	-0.859	-0.412	-1.022
Fishing	-0.665	-0.100	0.505	-2.409	-0.433	2.954
Agricultural product processing industry						
Livestock products	0.194	-0.075	0.534	-3.540	-0.499	13.123
Other meat products	-0.593	-0.208	0.912	-55.951	-0.789	12.965
Vegetable oil	-0.528	-0.199	0.304	-7.172	-0.565	1.064
Milk products	-0.039	-0.128	0.678	-48.049	-0.466	8.316
Processed paddy	0.004	-0.028	-0.030	-1.130	-0.444	2.663
Sugar products	0.066	-0.093	0.321	-4.663	-0.301	-0.584
Other food industry	-1.877	-0.151	0.330	-28.775	-0.424	2.813
Beverage, alcohol and tobacco	-0.184	-0.053	0.155	-10.368	-0.140	0.868
Textile	-0.109	-0.225	-0.851	-0.473	-0.037	-2.031
Leather	-0.060	-0.003	0.082	-6.776	-0.614	1.712
Wood products	0.006	-0.098	0.228	-3.300	-0.294	-1.961
Industrial products						
Clothing	-0.092	-0.046	-0.094	-4.037	-0.234	-1.733
Coal	0.264	-0.187	0.406	0.247	-0.607	-0.078
Oil	0.086	-0.020	0.213	0.027	-0.384	0.915
Natural gas	0.929	-0.410	1.032	1.134	-0.954	-0.695
Other mineral products	-0.046	0.012	0.079	-0.952	-0.086	-0.220
Paper	0.119	-0.113	0.279	-0.086	-0.198	-2.695
Oil and coal products	0.028	-0.048	0.067	-0.289	-0.027	-0.288
Chemical products	-0.057	-0.102	0.096	-3.441	-0.121	-1.090
Mineral products	-0.040	-0.188	0.194	-2.282	-0.156	-2.395
Steal	0.193	-0.228	0.190	0.392	-0.006	-2.173
Nonmetal products	-0.187	-0.098	0.186	-1.672	-0.211	-1.413
Metal	0.061	-0.265	0.174	-2.634	-0.087	-3.618

products						
Motor vehicle	-0.327	-0.141	-1.111	-2.905	0.087	-1.591
Other transportation	0.152	-0.054	0.056	-0.641	-0.217	-3.471
Electronic equipment	-0.036	-0.067	-0.339	0.297	0.043	-1.617
Machinery equipment	-0.012	-0.194	0.100	-3.442	-0.054	-2.864
Other manufactures	0.041	-0.147	0.148	-3.677	-0.243	-2.736
services	0.166	-0.066	0.205	1.343	-0.195	-2.481

Data resource：the dynamic GTAP model simulation results.

IV. Conclusions and policy suggestions.

First of all, although the realization of the Korea-EU FTA has a slight economy influence on China, China will still get negative impacts in the dynamic procedures with the speed-up of the FTA construction among its trade partners, especially when facing the pressure that the United States is about to use the FTA strategy coming back to Asia. So China should speed up the development of the Asian FTA and promote the negotiation processes of China-Korea FTA, China-Japan-Korea FTA as well as the ASEAN+3. At the same time, China should also put special efforts in opening up the developing countries and emerging markets, reducing the risk of export concentration.

Secondly, the Korea-EU FTA has negative effects on China's agricultural products, agricultural product processing industry and services while positive influence on China's industrial products. Thus, for the agriculture, China should promote the adjustment of internal structure and put emphasis on developing the processing industries on agricultural products to increase the value-added and improve the competitiveness of China's agricultural products. For the industry departments, China should also take the opportunity to increase investment and encourage the core technology innovation.

Thirdly, as the Korea-EU FTA has a greater negative impact on China's investment than consumption, which expands the share of consumption and lowers the overheated investment ratio in the economic composition aspect, China should also take the chance to stimulate consumption and change the development methods, as well as provide the favorable conditions for FTA negotiations with the trade partners.

Finally, due to China's consistent surplus to EU, EU continuously applies the anti-dumping and countervailing trade remedies to Chinese products. As the realization of Korea-EU FTA will expand China's exports to EU, Chinese government and enterprises should strengthen the researches on anti-dumping cases and laws involved with the key products to prevent the trade disputes from getting exacerbated. Equally, China should also be prepared in monitoring and early warning of imports form Korea, preventing the Korea's agricultural

products from attacking domestic market.

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