

Studies on the Status of Participating of China in East Asia Regional Production Network

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Abstract

With the development of the East Asia production network, the trade volume inside the region of China rose year by year, which was displayed by importing the parts and components in quantity from the region and exporting to USA, EU and other countries outside the region with the manufactured goods upon processing. This paper analyzes the degree of participating East Asia regional production network of China and the characteristics of the industry of China. This paper finally proposes the measures that China should improve the utilization rate of the free trade area in the East Asia regional production network, coordinate and unify, simplify the preferential rules of origin, and adopt the incentive measures to attract the medium-sized and small enterprises to join the regional production network.

Key words: Preferential rules of origin; East Asia regional production network; Intra-industry trade index

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1. FOREWORD

For more than ten years, global production specialization has created new division mode of the labor force among the East Asia economies, especially the Southeast Asia. The rapid development of the production network has changed the production mode of East Asia and international trade mode, and the trade inside the region is expanded through the cross-border transaction of parts and components. By the Asia input-output table of JETRO, it showed that the international fragmentation of production of Asia has evolved extensively and deeply from the simple south-north overseas processing trade development, known as "Asian Factory (Baldwin, 2008, 449-478)."

With the swift development of the East Asia free trade area and massive inflow of the foreign direct investment, East Asia gradually formed the perfect regional production network, and the trade volume and the economic growth rate ranked the first in the world. The status in the international production network highlighted increasingly, which played a role in pulling the world economic growth. The East Asia production network mainly included as follows, importing the mechanical components and parts from Singapore, Philippines, Malaysia and Thailand in Southeast Asia, and Japan, China and Korea in Southeast Asia. At present, Indonesia, Vietnam, Myanmar, Cambodia, and Laos gradually participated in East Asia regional production network. The major participation industries were mechanical, electrical and transportation equipments. By deepening of the East Asia production network, some distinctive characteristics are displayed.

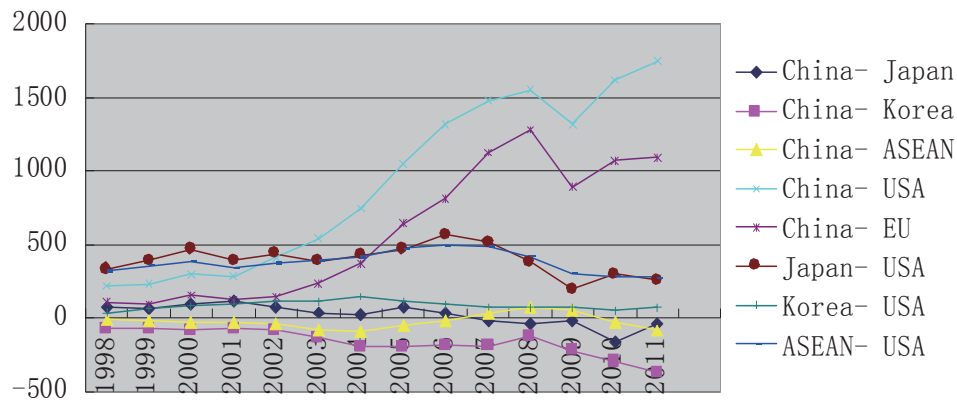


Figure 1
Trade Net Export of Final Products among Main Countries in the World (Unit: Hundred million USD)
Data source: It is calculated and drawn by UNCOMTRADE data.

2. THE INDEXES OF PARTICIPATING IN THE REGIONAL PRODUCTION NETWORK

The degree of participating in the regional production network by a country can mainly be reflected from two indexes, involving the logistics performance index and the intra-industry trade index.

2.1 Logistics Performance Index

The degree of participating in the regional production network by a country can be from two indexes. First is the logistics performance index. The development status of the regional network was related to the connection degree of the service. Therefore, if the logistics performance index of a country is higher, the degree of participating in the regional production network is higher. The World Bank calculated the ranks for the logistics performance index of some countries in 2012, involving China of 26, India of 46, Indonesia of 59, and Thailand of 38 (Connecting to compete---Trade logistics in the global economy. 2012, 6). It is thus clear that the logistics performance index of China had higher ranks, indicating the degree of participating in the regional production network by China is relatively deep.

2.2 Intra-Industry Trade Index

Grubel and Lloyd (1975) put forward the calculation formula of the intra-industry trade index. Mochamad Pasha calculated the intra-industry trade index of China, India and Indonesia from 2004 to 2008, as shown in the following table:

Table 1
Intra-Industry Trade Index

Country	Intra-industry trade index				
	2004	2005	2006	2007	2008
China	0.87	0.89	0.94	0.91	0.95
India	0.76	0.83	0.81	0.72	0.68
Indonesia	0.89	0.93	0.99	0.98	0.81

Data source: linkages between regional trade agreement and international production networks: evidence from five case studies in Asia (Mochamad Pasha) p.51.

From the data by the above calculation, the intra-industry trade index for China to India and Indonesia was the highest, and also was as close as 1. It was thus clear that the degree of participating in the regional production network was the deepest.

Table 2
Intra-industry Trade Index of Electrical Appliances (SITC-77) Products Among Main Countries in East Asia

	China- Japan	China- Korea	China- Singapore	China- Thailand	China- Korea	Japan- Singapore
2002	0.44	0.44	0.89	0.51	0.7	0.39
2003	0.41	0.38	0.74	0.42	0.72	0.45
2004	0.45	0.38	0.79	0.44	0.7	0.44
2005	0.49	0.33	0.82	0.4	0.7	0.39
2006	0.5	0.36	0.92	0.38	0.78	0.45
2007	0.49	0.4	0.96	0.35	0.84	0.46
2008	0.54	0.45	0.88	0.41	0.84	0.47
2009	0.51	0.39	0.9	0.41	0.76	0.62
2010	0.53	0.37	0.96	0.45	0.8	0.49
2011	0.55	0.38	0.99	0.55	0.82	0.54

Data Source: The author calculated and gained from the calculation method from Grubel and Lloyd (1975) put forward the calculation formula of the intra-industry trade index.

Since participating in the East Asia production network, the foreign economy gained the rapid expansion, and had developed into the second largest trade country globally. At the same time, in view of the factor

endowment of China and other elements, China had gradually become the gathering place for the intermediate goods of the East Asia production network, and is at the core of the East Asia production network.

3. CHARACTERISTICS OF PARTICIPATING IN EAST ASIA REGIONAL PRODUCTION NETWORK BY INDUSTRY OF CHINA

Table 3
Manufacturing Trade Composition and Total Volume of Export Trade in China

	Primary products	Intermediate goods		Final products		Total volume of export trade (hundred million USD)
		Semi-manufactured goods	Components and parts	Capital goods	Final consumption goods	
1998	3.82%	23.26%	9.81%	15.03%	47.90%	1838.09
1999	3.30%	22.33%	11.57%	15.90%	46.79%	1949.31
2000	3.67%	22.25%	12.83%	17.27%	43.76%	2492.03
2001	3.37%	21.71%	13.99%	18.39%	42.28%	2660.98
2002	2.93%	21.03%	15.62%	19.96%	40.24%	3255.96
2003	2.58%	20.49%	15.97%	23.26%	37.44%	4382.28
2004	1.89%	21.85%	16.65%	25.22%	34.18%	5933.26
2005	1.95%	21.94%	16.87%	26.41%	32.60%	7619.53
2006	1.42%	22.94%	17.43%	26.84%	31.09%	9689.36
2007	1.21%	23.74%	17.29%	27.93%	29.63%	12200.6
2008	1.29%	25.33%	17.42%	27.89%	27.91%	14306.93
2009	1.02%	21.17%	17.60%	29.93%	30.06%	12016.47
2010	0.90%	22.18%	18.27%	29.67%	28.81%	15777.64
2011	0.88%	23.73%	17.68%	29.13%	28.43%	18983.88

Data source: It is calculated by UNCOMTRADE data.
 Note: In BEC classification, 111, 21, 31 are primary products, 121, 22, 32 are semi-manufactured goods, 42, 53 are components and parts, 41, 521 are capital goods, 112, 122, 51, 522, 6 are final consumption goods.

Firstly, from Table 3, we can know the proportion of the final products in total volume of export trade in China would be far more than the primary products. The proportion of the sum of capital goods and final

consumption goods in the export trade was up to nearly 60%. The proportion of the capital goods export increased from 15.03% in 1998 to 29.13% in 2011, with nearly twice of growth.

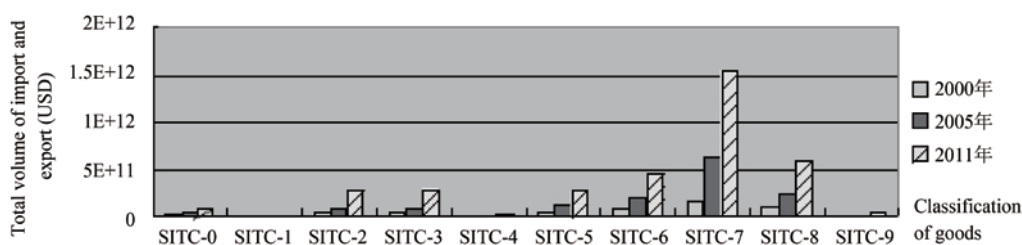


Figure 2
Foreign Trade Volume of Ten Classes of Goods in China

Note: (Rev. 3) SITC-0 is food and live animals. SITC-1 is beverage and tobacco. SITC-2 includes the fur, oil seed, oiliness fruit, cork and wood, natural rubber, paper pulp, textile fiber, crude oil, fertilizer, metallic mineral ore, and metallic scrap. SITC-3 is mineral fuel, lubricating agent and relevant materials. SITC-4 is animal and vegetable oil, grease and wax. SITC-5 is chemicals and related products. SITC-6 is mainly the manufactured goods classified by materials, leather, rubber products, cork and wooden products, paper or paperboard, textile yarn and fabric products, nonmetallic mineral products, nonferrous metal and metal products. SITC-7 is the mechanical and transportation equipments. SITC-8 is the miscellaneous products, involving the furniture and parts, clothing and clothes accessories, shoes, travelling articles and so on. SITC-9 is the classified goods rather than the trading standard classification transaction in other places.
 Data source: It is calculated by UNCOMTRADE data.

From the above figure, we can see that total trade volume of goods in SITC-7 in the foreign trade of China was considerably higher than other classes of goods. Therefore, this paper will mainly research the trade

situation of subdivided goods under SITC-7, so as to judge the main industry of participating in the East Asia production network by China.

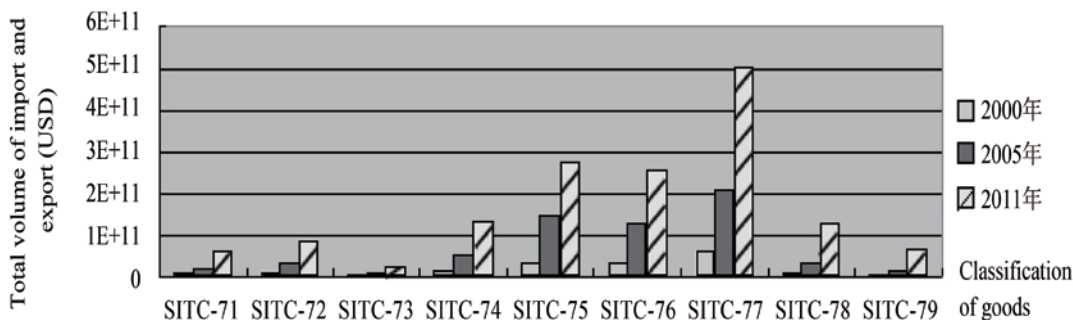


Figure 3
Total Volume of Import and Export Trade Goods in SITC-7 From China to the World

Note: (Rev. 3) SITC71 – power generation mechanical equipments; SITC72 – special machine for individual industry; SITC73 – metal working machinery; SITC74 – general industrial machinery and equipments, and machine components, not elsewhere specified; SITC75– office machine and automatic data processing instrument; SITC76 – telecom and record, sound equipments and instruments; SITC77 – electrical machinery, instruments and tools, and parts (including the non-electrical, and electrical family-type equipments); SITC78 – road vehicles (including the air cushion vehicles); SITC79 - Other transportation equipments.
Data source: It is calculated by UNCOMTRADE data.

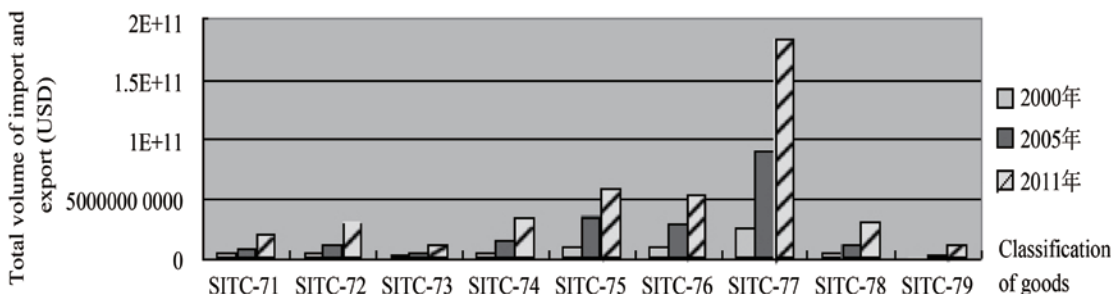


Figure 4
Total Import and Export Volume of Goods in SITC-7 from China to Main Countries in East Asia Region

Note: Here East Asia means China, Japan, Korea and main countries of ASEAN.
Data source: It is calculated by UNCOMTRADE data.

From Figure 3, we can see that the total import and export volume of goods in SITC-74, SITC-75, SITC-76, SITC-77 and SITC-78 for the foreign trade of China was relatively high. Moreover, the total import and export volume of goods in SITC-7 between China and main countries in East Asia region also showed the similar characteristics in Figure 8. Total trade volume of goods in SITC-77 from China to main countries in East Asia covered about 40% in the total volume of the trade of goods in such class from China to the world, and the proportion of other classes also reached about 30%¹. It is thus clear that the main industries of participating in the East Asia production network by China are found in electronic equipment's, electrical machinery and components and parts, and automobile industry etc.

Based on the industrial case, it is analyzed by the

trade volume of the electrical components and parts as well as manufactured goods. The export of the electrical components and parts in China mainly tended to Japan, Korea and EU, while the components and parts trade of ASEAN and USA basically was in the state of equilibrium (see Figure 5). From the manufactured goods trade, the main export market of China is USA, while importing from other countries inside the region (see Figure 10), i.e. the components and parts inside East Asia region flowed into China in quantity, and then input to other countries outside the region upon the simple assembly and processing. China was an intermediate hub in the product trade inside and outside the region, and played an important role in the development of the entire regional economy of East Asia.

¹ It is calculated by the data in Figure 7 and Figure 8.

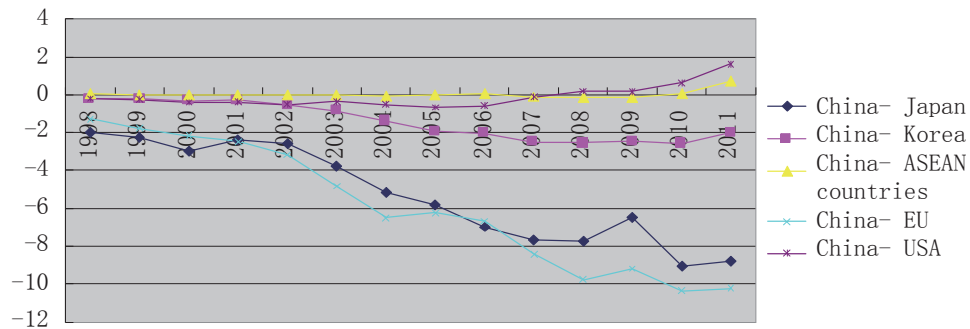


Figure 5
Net Export of Electrical Components and Parts Trade Between China and Main Countries and Areas
 Unit: Hundred million USD
 Data source: It is calculated by UNCOMTRADE data.
 Note: Here the electrical components and parts regard 8538 in HS coding as the research object.

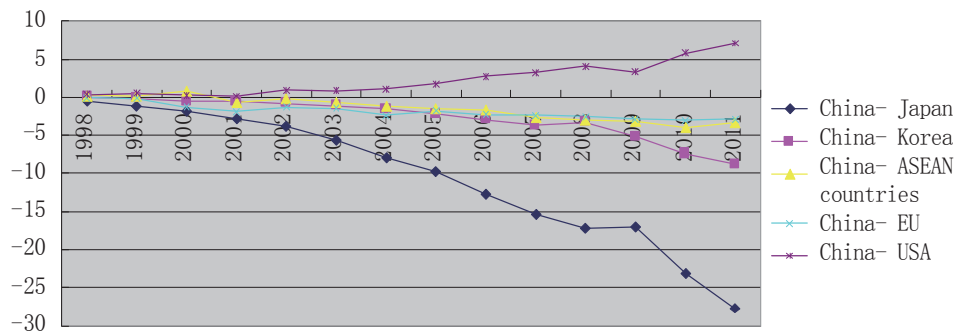


Figure 6
Net Export of Electrical Manufactured Goods Trade Between China and Main Countries and Areas
 Unit: Hundred million USD
 Data source: It is calculated by UNCOMTRADE data.
 Note: Here the electrical manufactured goods regard 8536 in HS coding as the research object.

Above all, with the development of East Asia production network, China “embedded” in international vertical division of labor system of East Asia rapidly through the processing trade by means of the abundant labor forces and preferential trade policy advantages, and also became the center of East Asia production network and the platform for exporting the final products outside the region, which was known as the manufacturing base all over the world.

Nevertheless, the vast favorable balances could not bring generous profits for China, but made China in the face of a series of problems. Firstly, the export market of China mainly focused on some countries outside the region, and these countries would be bound to influence the economy of China greatly in case of the recession in demand. Next, the favorable balance of trade made the trade friction between our country and these countries deepen continuously, and resulted in the rise of the trade protectionism. Finally, in view of the simple processing and assembly status of China, there was only a small number of profits for the exported products shared by China, and China benefited a little from it. The above-mentioned problems were essentially the entire problems of the economy in East Asia region, but the problems embodied specifically in China due to the special status of China in the East Asia production network.

4. POLICY SUGGESTIONS FOR PROMOTING STATUS OF CHINA IN EAST ASIA PRODUCTION NETWORK

A series of problems faced by China in East Asia production network were caused by the external factors such as the regional production network, and also caused by the national conditions of China. We can guide and reply for the external cause, while needing constant reformation and innovation for internal cause.

4.1 Enhance FTA Use Ratio by Enterprise

The swift development of free trade area will play a significant motivation role in deepening the regional production network. However, due to the problems such as differences for preferential rules of origin in different free trade areas and the insufficient information of the preferential policy in free trade area by the enterprise, it resulted in the relatively use ratio for free trade area by the enterprise, and seriously restricted the development of the regional production network. According to the survey of JETRO in 2011, there were 2008 companies surveyed in Northeast Asia, and the effective rate of the response was 47.8%, with 37.2% of enterprises using the preference of the free trade area in exporting and 33.9% of enterprises using the preference in importing. In China, 26.5% of

companies used the preference of the free trade area, 44.1% in Korea, 42.9% in Malaysia, 40.6% in Singapore, 37.6% in Philippines, and 64.4% in Indonesia. From the survey results, China is the country with the lowest rate of using the preference of the free trade area, which not only influenced the profit earning of the enterprise, but also restricted the degree of participating in East Asia production network by the enterprise. At the same time, most companies should cost too much on gaining the certificate of origin and spend a long time in applying the certificate of origin to a great degree, so they shrank back at the sight of the preference of the free trade area. In China, 24.3% of enterprises deemed that gaining the certificate of origin took too long, 15.6% of enterprises deemed that the procedure of gaining the certificate of origin was too complex, and 16.8% of enterprises lacked of the staffs for dealing with the problems relevant to the free trade. Thus, the main problem of hindering the Chinese enterprises to use the preference of the free trade area was the problem about the certificate of origin.

Accordingly, our country should actively enhance the personnel training of the relevant administrative agencies involving the customs, so as to reduce various artificial poor efficiencies. Meanwhile, our country should simplify the procedures related to the application and issuance of the rules of origin to the greatest extent, use the existing information to decrease the requirements of the additional data and relevant documents, use the information technology and adopt the digital certificate to boost the paperless application and issuance processes for the rules of origin, shorten the application time, and improve the administrative efficiency. The simple and easily applied rules enabled the enterprise to understand and accommodate in a relative short time, reduce the enterprise management cost, information cost, labor cost and other adaptability costs, further enhance the FTA use ratio by the enterprise, and facilitate the development of the intra-regional trade. In addition, it is necessary to expand the publicity, increase the awareness of the rules of origin by the enterprise, and avoid the low use ratio of FTA arising out of a lack of the awareness.

4.2 Coordinate and Unify the Rules of Origin Gradually, and Reduce the Management Cost of Origin

In East Asia, the eclipsed free trade area with ASEAN, Japan, China, Singapore and Thailand as the wheel axle was generated, resulting in the overlapping and intersection of the rules of origin, and increasing the cost for the production strategic adjustment of the enterprise. The differences for the rules of origin not only caused the administrative cost, but also enhanced the production cost, and further had the comparatively large influence on the small producer relative to the large producer in the axle countries. Preferential rules of origin of various free trade areas in East Asia contained the regional value content standard. If the standard of

rules was not clear, the government regulator would be relatively subjective during the judgment, which easily produced the rent seeking. According to the survey on the international operation conditions of Japanese enterprises by Japan External Trade Organization in 2006, among 97 multinational corporations of Japan using and preparing for using East Asia FTA, about 30% of enterprises sensed different rules of origin and increased the trade cost and the complex degree of commercial activities. Besides, 33% of enterprises anticipated that the cost arising out of the rules of origin would be added in the future. 64% of enterprises hoped the rules of origin of East Asia FTA could be unified, among which 24.7% of enterprises hoped that East Asia FTA could selected one of VC and CTC as the unified rules of origin. Therefore, in view of an interdependence entirety for production and processing of East Asia, it is necessary to accelerate the progress of 10+ 3 free trade area, and meantime unify the preferential rules of origin, and reduce the cost arising out of the differences of rules.

As for the influence degree of the preferential rules of origin on China in East Asia import and export trade, this paper adopted the demonstration method to analyze the relevance between the preferential rules of origin and the China- ASEAN components and parts trade. Through the introduction of the origin restrictive index, the origin restrictive indexes after 2003 were be set as 1, i.e. China and ASEAN free trade agreement and the preferential rules of origin began to play a role since 2004. From the analysis results, the import of components and parts from China to ASEAN doubled after introducing the rules of origin.

Furthermore, for the management of the origin, the self-certification method should be adopted to the greatest extent, so as to reduce the arbitrariness due to the verification and supervision of the government, and improve the efficiency gained by the origin. The survey by Kawai Wignaraja indicated that, 10.8% of Korean enterprises, 22% of Thailand enterprises, and 30.6% of Philippine enterprises considered that the time wait for gaining the certificate of origin and the management cost were the reason of hindering the usage of FTA. The convenience of the information technology can be used, and the digital certificate and electronic verification system can be adopted properly, so as to improve the efficiency of rules.

4.3 Perfect the East Asia Regional Production Network, and Promote the Medium-Sized and Small Enterprises to Enter the Regional Production Network

In case of enabling the enterprise to profit from the regional production network, an attractive production network should be created. It is necessary to adopt the following measures. (1) Promote the comprehensive trade liberalization, involving the unilateral liberalization, regional liberalization and multilateral liberalization. (2) Merger trade and liberalization of the investment.

The trade protection can increase the investment momentum of the multinational corporations, but it had better attract the investment by the liberalization of the investment. Thus it will make the investor pursue the efficiency but not just gain the market, and the selection for the investment place depends on the cost advantage during the process of the vertical integration. (3) The service relevant to the manufacturing industry should be promoted. The investment on the manufacturing industry and related services will greatly improve the efficiency of the production network. However, the services in some countries are still in the monopoly phase. So it distorts the efficiency of the service provider.

Meanwhile, as for the participating enterprises, large enterprises mainly participate in the regional production network at present. The production network is short of the competitiveness for the medium-sized and small enterprises, with the relatively insufficient financial resources, technology and organizational capability, so it is necessary to take some measures to attract the medium-sized and small enterprises to enter the regional production network. (1) Quicken the realization of the economy of scale. The medium-sized and small enterprises possess very large elasticity, and can adapt to the market demand with the rapid change and adapt to the technical development quickly. The overflow effect for the knowledge and technology of the medium-sized and small enterprises is accelerated, so as to meet the requirements of massive orders of the international production network, and realize the economy of scale through the e-commerce. (2) Strengthen the relationship between the domestic producer in the vertical chain and the global production chain. At the top of the chain, strengthen the relationship between the national export and the international buyer as well as the global supplier. At the bottom, strengthen the connection between the high level supplier and the lowest level supplier (medium-sized and small enterprises). The multinational corporations introduce the medium-sized and small enterprises to the regional production network by the means of outsourcing, which is helpful for the domestic employment and local volume construction. (3) Enhance the capability of participating in the regional production network by the medium-sized and small enterprises. In order to participate in the regional production network, the medium-sized and small enterprises must select a certain specific parts, and can produce the quality of meet the demand for the production network, as well as the labor conditions and environment. At the same time, assist the medium-sized and small enterprises to perfect their capability and contest force of participating in the international production network through the cooperation among the enterprises. (4) The medium-sized and small enterprises can help the sustainable development of the regional production network. The government should adopt various policies to encourage the multinational

corporations establishing the relationship with the Chinese medium-sized and small enterprises, and enhance their international competitiveness. Many countries formulate the incentive measures and corresponding preferential tax policy for the medium-sized and small companies, and help these companies become more effective in the international supply chain.

4.4 Enhance the Self-Enforcement Capability of East Asia Region

The interdependency of processing among various countries in East Asia, lack of WTO restriction, and lack of high level administration lead to the vulnerability of the region. These characteristics make the internal region generate the dispute easily, and there is not an authoritative manager for solving the dispute. For example, Japan- Malaysia and Malaysia- India easily generate the trade disputes in the aspect of automobile industry, and the problems can be solved when three parties get together. In case of uncompromising respectively, it is very troublesome to solve, and a large number of labors, materials and time should be exhausted. Therefore, it is necessary to build the powerful regional administration, reinforce the self- enforcement capability of the region, and guarantee the regional operating efficiency. According to the survey, the proportion of supporting and reinforcing the existing administration is 80%, the proportion of consolidating the existing agency is 74%, and the proportion of supporting and establishing new agency is 48%. Thus, the improvement of the economic dependence degree inevitably demands the convergence of the economic policy of member countries, and further demands the establishment of the administration in the super- state level so as to strengthen the regional governance. Just as EU, through establishing the agency of surpassing the national authority, such as European Central Bank and European Commission, formulate the economic and social policy in favor of the entire region, and enhance the overall strength and stability degree of the region. With the improvement of the East Asia integration degree, we can consider to increase the regional trade creation effect and reduce the shift effect through establishing the free trade area of "10+3" mode, so as to make the region become the close entirety, and further build the regional administration, which can not only help the development of the East Asia regional production network, but also enhance the influence on the international rules.

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