

ASEAN-China Cooperation Under the Framework of CAFTA

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Abstract—This paper holds that China and the three industrial cooperation frameworks under the framework of CAFTA still have the problems of single structure, low investment and weak cohesion. This paper argues that the corresponding optimization can increase the emphasis on promoting bilateral scientific industrial structure; With the promotion of zero tariffs, the industry will play a greater role in service trade. From the perspectives of exogenous comparative advantage, endogenous comparative advantage consolidation and transaction efficiency improvement, this paper argues that it is necessary to further deepen china-ASEAN cooperation under the framework of CAFTA.

Keywords—CAFTA Framework; China - ASEAN Cooperation

I. INTRODUCTION

China - ASEAN Free Trade Area in 2010 formally implemented, the cooperation between China and ASEAN started relative to other major economies late, but rapid development [1]. This cooperation greatly facilitated the cooperation between the two sides, promote the progress of both sides, bring great economic benefits to both sides, at the same time enhance the international status of the two sides. This strategic framework to promote the upgrading of the two economies and promote economic growth.

On the international front, the economic downturn resulting in less investment, the need for new incentives. ASEAN countries and close economic and trade exchanges in order to promote domestic economic development, expand employment and increase exports Olusegun Ma Nanhai argument is an important strategic economic objectives [2]. while the world economy is constantly changing, so that developing countries are more tight-cut demand for capital, which is also an important opportunity. China's current export capacity from the large-scale capital, ASEAN is also the subject of industrial cooperation. Since the China - ASEAN Free Trade Area is established, the continuous development of industrial cooperation between the two sides laid a good foundation for cooperation at all levels of

the other. ASEAN members are also being constantly urbanization and industrialization, there is huge demand for investment, but investment in production capacity to meet demand, it relies on industrial cooperation to introduce advanced foreign technology and industry. China - ASEAN Industrial Cooperation could be carry forward the strengths of both parties, across the allocation of production factors between the two sides, not only to optimize the industrial structure may also promote industrial restructuring. From the above, China and ASEAN Industrial Cooperation will help both sides to obtain benefits.

China is still in the exploratory phase of industrial cooperation, related research has just begun, quantitative research is relatively scarce. This research has theoretical and practical significance, in theory enrich foreign investment in developing countries while also providing strategic investors that China's reference [3]. This paper analyzes the following questions on the basis of the method set forth and put into use on existing data: China - ASEAN cooperation on the economic impact of the two sides; the difference between industrial cooperation between different countries and sectors.

II. INTERNATIONAL INPUT-OUTPUT MODEL

With the industry to enhance the country's supply capacity of receiving, sector output also able to further expansion, and thus created the need for all sectors, and ultimately lead to overall economic growth. This process stems from the receiving country in the industrial output growth in the industrial sectors of cooperation, which is a supply demand driven process, and this process can be based on international input-output table supply constraint model for analysis. To analyze the impact of industrial cooperation through a first output model we included two country's international investment. Two countries respectively s and t to represent each country is divided into two categories i and j sector. Two country's international input-output table as shown in Table 1.

TABLE I INTERNATIONAL INPUT-OUTPUT TABLE

			Use the middle				Final demand	The total output or imports
			s country		t country			
			i department	j department	i department	j department		
Use the middle	s country	i department	A_{ii}^{ss}	A_{ij}^{ss}	A_{ii}^{st}	A_{ij}^{st}	Y_i^s	X_i^s
		j department	A_{ji}^{ss}	A_{jj}^{ss}	A_{ji}^{st}	A_{jj}^{st}	Y_j^s	X_j^s
	t country	i department	A_{ii}^{ts}	A_{ij}^{ts}	A_{ii}^{tt}	A_{ij}^{tt}	Y_i^t	X_i^t
		j department	A_{ji}^{ts}	A_{jj}^{ts}	A_{ji}^{tt}	A_{jj}^{tt}	Y_j^t	X_j^t
ROW			Z_i^{rs}	Z_j^{rs}	Z_i^{rt}	Z_j^{rt}	Y^r	M^r
Initial investment			N_i^s	N_j^s	N_i^t	N_j^t		
Total investment			X_i^s	X_j^s	X_i^t	X_j^t		

A_{ij}^{st} represents the direct consumption coefficient of the country i department of the country, Y_i^s represents the final demand of the country i department, and X_i^s represents the total output of the country i department. N_i^s represents the added value of the s country i department, and Z_i^{rs} represents the intermediate consumption of the s country i department in the rest of the country and the department. Similarly, the meaning of other variables is known.

As is clear from Table 1, the two international line input-output table in Figure 1 shows the balance:

$$\begin{bmatrix} X_i^s \\ X_j^s \\ X_i^t \\ X_j^t \end{bmatrix} = \begin{bmatrix} A_{ii}^{ss} & A_{ij}^{ss} & A_{ii}^{st} & A_{ij}^{st} \\ A_{ji}^{ss} & A_{jj}^{ss} & A_{ji}^{st} & A_{jj}^{st} \\ A_{ii}^{ts} & A_{ij}^{ts} & A_{ii}^{tt} & A_{ij}^{tt} \\ A_{ji}^{ts} & A_{jj}^{ts} & A_{ji}^{tt} & A_{jj}^{tt} \end{bmatrix} \begin{bmatrix} X_i^s \\ X_j^s \\ X_i^t \\ X_j^t \end{bmatrix} + \begin{bmatrix} Y_i^s \\ Y_j^s \\ Y_i^t \\ Y_j^t \end{bmatrix}$$

Fig. 1 Two international input-output line showing the relationship between the balance

After matrix block diagram of a balance, can be seen as a sector i s country sub-array, while the other sectors seen as a sub-array, the results obtained after the block shown in Figure 2:

$$\begin{bmatrix} X_i^s \\ X_j^s \\ X_i^t \\ X_j^t \end{bmatrix} = \begin{bmatrix} X_i^s \\ X_j^s \\ X_i^t \\ X_j^t \end{bmatrix}, \begin{bmatrix} A_{ii}^{ss} & A_{ij}^{ss} & A_{ii}^{st} & A_{ij}^{st} \\ A_{ji}^{ss} & A_{jj}^{ss} & A_{ji}^{st} & A_{jj}^{st} \\ A_{ii}^{ts} & A_{ij}^{ts} & A_{ii}^{tt} & A_{ij}^{tt} \\ A_{ji}^{ts} & A_{jj}^{ts} & A_{ji}^{tt} & A_{jj}^{tt} \end{bmatrix} = \begin{bmatrix} A_{ii}^{ss} & \bar{A}_{12} \\ \bar{A}_{21} & \bar{A}_{22} \end{bmatrix},$$

Fig. 2 Block matrix

From the perspective of whether the product can trade point of view, for non-tradable goods and intermediate inputs, this paper believes all by supply t country. For the traded goods of A_{ji}^{ss} , some are provided by a part of the country s, others from the outlet to t s country States; t

supplied by another part of the country. This change is mainly manifested in part A_{ji}^{ss} and A_{ji}^{ts} .

The new intermediate inputs structure does not change the technical level of industry cooperation, but the source of the product has changed, thus satisfying the condition:

$$A_{ji}^{ss*} + A_{ji}^{ts*} = A_{ji}^{ss} + A_{ji}^{ts}$$

So after industrial output expanded cooperation brought about by the impact on the output of other sectors, it has become;

$$\Delta \bar{X}^* = (I - \bar{A}_{22})^{-1} \bar{A}_{21} \Delta X_i^s$$

Further it can be concluded, By s country i department's added value rate V_i^s and the rest of the added value of rate of diagonal matrix \bar{V} , can get the resulting value added of the departments of the two countries

The added value of industrial cooperation department changes:

$$\Delta N_i^s = V_i^s \Delta X_i^s$$

Value added in other sectors of the two countries change:

$$\Delta \bar{N}^* = \bar{V} \Delta \bar{X}$$

III. EFFECTIVE INDUSTRIAL COOPERATION

A. Select Sector

In general, the department of industrial cooperation between China and ASEAN should have a comparative advantage in the region. In general, the region's share of sector output can be used as indicators to determine whether or not the department has the advantage, based on this idea of building regional firms generally can observe the various departments of science and whether a regional division of responsibilities in the area of economics. Location quotient calculated as follows:

$$LQ_{ji} = \frac{Y_{ji}/Y_i}{Y_j/Y}$$

LQ_{ji} Indicates the location quotient j sector i region, Y_{ji} represents the value of j sector i region, Y_i represents the output value of the region, Y_j represents the output value of j sector in all regions, Y represents the value of all

the regions and. Location quotient is the ratio of the output value of the sector the proportion of a department and an area percentage of the GDP in all areas of the region in GDP. If $LQ_{ji} > 1$, may be considered to be an advantage in the sector j i area or department more specialized departments, have a greater advantage; the same token be seen that if $LQ_{ji} < 1$, it is considered that this sector is relatively insufficient specialization lack of comparative advantage. At the same time, the larger location quotient indicates a higher degree of specialization department, the comparative advantage.

B. Role of GDP in industrial cooperation

For the tradable sector, since China and ASEAN countries are able to provide the required intermediate inputs, and therefore the source of industrial cooperation department which uses intermediate inputs would be a real problem of trade-off, the choices are transportation costs, product quality, supply department and many other effects capabilities. [4] visible, concrete structure of intermediate inputs is difficult to accurately measure, in order to avoid intermediate inputs affect the structure of the results of the calculation approach we have taken extreme circumstances, to find a range of results.

In this regard, we consider two extreme cases: 1) the assumption of tradable goods in intermediate inputs (the investment of Chinese for Chinese middle part, that is A_{ji}^{SS}) and still provide Chinese exports to ASEAN countries; 2) the assumption of intermediate inputs may Trade goods provided by the counterparts in ASEAN countries. In the first case, the business sector A_{ji}^{SS*} may be equal to the value in the corresponding value A_{ji}^{SS} , the value of no trade sector is 0; a constant value in the business sector is A_{ji}^{TS*} , business sector values are not equal and the value of the corresponding sector is A_{ji}^{SS} and A_{ji}^{TS} . In the second case, the value of industrial cooperation department A_{ji}^{SS*} is same, the value of other departments are 0; values in the same industry cooperation department A_{ji}^{TS*} did not change, other departments have equal value with the corresponding value of the sector A_{ji}^{SS} and A_{ji}^{TS} . After determining A_{ji}^{SS*} under different circumstances, we can calculate the impact on all other sectors increased value after a certain sector output growth.

China and ASEAN countries, the growth rate of GDP depends on what kind of industrial cooperation departments to take intermediate inputs. In Case 1, due to the assumption that the product can still be provided by the Chinese trade, industrial cooperation sectoral linkages with China more closely, pull the GDP of China is also the largest. In Case 2, all of the intermediate inputs by the ASEAN countries, ASEAN countries, thus stimulating effect on GDP of the most obvious, and industrial sectors of cooperation ties with China through other departments indirect conduction, eventually pulling very limited effect on China's GDP. From the total GDP of both the pull effect of view, different situations and no significant difference, so what kind of cooperation among industry sectors using input

structure actually affect the distribution of benefits to a large extent.

IV. SUMMARY

In recent years, China from being "imported" to "going out" strategy adjustment, industrial cooperation between hope and by developing countries to achieve complementary advantages, promote industrial restructuring and upgrading in the region. At the same time, ASEAN countries are in the process of industrialization and urbanization, but also want to promote their own economic development through the introduction of foreign technology and industry. In this paper the two countries through the establishment of international investment-output model, using the data in 2011 ADB-MRIO table estimates the impact of China and ASEAN Industrial Cooperation under the two scenarios of each country's GDP, and the overall impact effect make a comprehensive evaluation. The main conclusions are as follows.

First, the actual impact of industrial cooperation on both sides of GDP, depending on the structure of intermediate inputs industrial cooperation sector. Specifically, the minimum and maximum pulling effect on the GDP of ASEAN countries pull effect in the case of industrial cooperation under one pair of Chinese GDP, while in the case of two opposite. The actual pulling effect somewhere between these two extremes. In the long run, as the middle of industrial cooperation sector investment structure is more biased in favor of ASEAN, the ASEAN Industrial Cooperation pulling effect on the country's GDP will be more significant. , In addition to stimulating domestic economic growth, we should pay more attention to the role of industrial cooperation in the long term for the adjustment of economic structure, improve the industrial chain for China to participate in international industrial cooperation.

Second, under different circumstances, although industrial cooperation pull effect of different sides GDP, but overall, the ASEAN Industrial Cooperation pull effect the country's GDP than China, indicating that industrial cooperation is more favorable for economic growth in the ASEAN countries. At the same time, under different circumstances change both the GDP of the total gap substantially smaller amplitude, indicating that more intermediate inputs structure influences the distribution of the total GDP growth between the two sides.

Third, according to the results of a comprehensive evaluation, the ASEAN countries, industrial cooperation between China and Indonesia and the Philippines to the greatest extent possible to pull the two sides GDP growth, while industrial cooperation between China and Vietnam for both sides pull effect weakest GDP. Meanwhile, in the choice of industrial cooperation sector, the industrial cooperation in other non-metallic mineral products industry pull effect on GDP is the most obvious, with minimal impact on the textile industry cooperation GDP. Therefore, the current China and Indonesia and the Philippines to carry out industrial cooperation for the economic growth of both sides it is the most favorable in other non-metallic mineral products industry.

According to this paper, the impact on their respective industrial cooperation depends largely on cooperation among

industry sectors investment structure, that is, its industry chain is more biased in favor of which side. For China, a purpose to participate in international industrial cooperation is to help foreign resources, boost the domestic industrial restructuring and upgrading, and promote China climbed to a high-end industrial chain in the area.

In this regard, the promotion of domestic industrial structure upgrading from the point of view, China should guide the industry in cooperation sectors increased use of domestic high-end products sector as intermediate inputs, two departments to strengthen ties in production. Through industrial cooperation sector demand for domestic high-end sector driven, China to expand exports of high-end sector of the ASEAN countries, and promote domestic industrial structure tilted toward high-end industries. At the same time, due to the high-end products with respect to low-end products, more difficult to be replaced by the ASEAN countries, local products, which makes high-end Chinese industrial sectors to benefit from international cooperation and long-term [5]. To this end, Chinese in the choice of sector industrial cooperation, we can focus more closely consider contacting the department and the high-end sector, although this may sacrifice some economic growth, but will be more in favor of domestic industrial structure adjustment and upgrading.

This paper describes the role of economic growth in China and the ASEAN members to carry out industrial cooperation in many sectors, and compared Chinese cooperation at the national and sectoral dimensions dimension What is the difference in the estimates based on the results. In addition, the analysis in this paper can also be the way to China to participate in international industrial cooperation with the direction provided some reference, but wants this to get more comprehensive results and analysis are still dependent on further research.

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