

Comparison of the Export Competitiveness among Bangladesh, China, India and Myanmar (BCIM) to Japan

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Abstract—This paper mainly analyzes the export competitiveness of Bangladesh, China, India and Myanmar in the Japanese market. First, the data from 1995 to 2016 are used to compare the export quotas and trends of the four countries with Japan, and to initially determine the trade strength of the four countries of Bangladesh, China, India, and Myanmar to Japan in the past 20 years. Secondly, by measuring the export similarity index among China-India, China-Bangladesh, China-Myanmar, India-Bangladesh, India-Myanmar and Myanmar-Bangladesh to Japan, we will further measure whether there is convergence in the industrial structure. The results show that China's exports to Japan are far ahead of the rest of the three countries and occupy the largest share. The China-India, China-Bangladesh, India-Bangladesh's export similarity index to Japan is at a relatively high level. There is a serious problem of industrial convergence and there is strong competition in the Japanese market. India-Myanmar, China-Myanmar, Myanmar-Bangladesh have relatively weaker competitiveness in the Japanese market. In particular, the similar levels of exports between Myanmar and Bangladesh have been relatively low, which is conducive to the complementary trade.

Keywords—BCIM Economic Corridor; export similarity index; trade competitiveness

I. INTRODUCTION

Since the establishment of the BCIM economic corridor in 2013, the trade exchange among Bangladesh, China, India and Myanmar has become more frequent, and the import and export trade volume of the four countries in the sub-region has increased year by year. BCIM economic corridor is the economic hub on the southwest route of the Silk Road. Its construction is closely related to the development of neighboring countries, its significance lies not only in the development of the BCIM economic corridor itself, but also in its role of economic radiation in driving South Asia and Southeast Asia and East Asia. The joint development of the three major economic sectors is of great significance to accelerating economic development and regional stability in southwest China and its neighboring countries.

Many authors made forward-looking comments on the construction of the BCIM economic corridor. Li Shuyao [4]

analyzed and predicted the development dilemma and development potential of the BCIM economic corridor through related theory of regional cooperation and comparative advantage theory. Li Yanfang et al. [1] analyzed the overall development of inter-regional trade in the BCIM countries. She placed Bangladesh, China, India and Myanmar on the international market and exported it to the United States as an example. And through an analysis of the trade volume and trade structure of the four countries comprehensively assessed the level of economic and trade cooperation in the region and put forward a series of policy recommendations for the BCIM economic corridor. Zhang Shuai [7] based on the feasibility analysis of comprehensive cooperation in Bangladesh, China, India, and Myanmar at this stage, combined with obstacles in the cooperation process, provided useful suggestions for China to participate in the BCIM economic cooperation.

Chen Lijun and Liu Zijuan [2] proposed that the four-party cooperation mechanism of BCIM should formally move from the "two tracks" to "one track." Due to the complementarity of the economic, trade, and market structures of the four countries, their development space is still vast. The construction of the BCIM economic corridor will continue. Provide convenience for bilateral trade and achieve mutual complementarity and mutual benefit. To promote the all-round development of Bangladesh, China, India, and Myanmar, we should not only pay attention to the economic development within the sub-region. We must place the four countries in a larger trade market to examine the trade strength and development potential of each country. Previously, few scholars made detailed reports and studies on exports from Bangladesh, China, India, and Myanmar to third-party markets. Japan, as the most developed country in Asia, is BCIM countries' largest export market in Asia. The exports of Bangladesh, China, India, and Myanmar to Japan account for 14.60% of the total exports of four countries to the world. It has strong representative for measuring the export and competition of BCIM economic corridor on the third party market. Therefore, this article selects Japan as a third-party market for foreign exports from the BCIM economic corridor. First of all, through analysis of the exports of the four countries of Bangladesh, China, India, and Myanmar to Japan in the past 20 years, we have come to a conclusion that the four countries' share of exports to Japan

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and the trend of change. Secondly, by comparing the similarity indexes of China-India, China-Bangladesh, China-Myanmar, India-Bangladesh, India-Myanmar and Myanmar-Bangladesh to Japan, we examined the relative competitiveness of the four countries' exports to Japan and whether there is industrial convergence.

II. THE EXPORT MARKET SHARE OF BCIM COUNTRIES TO JAPAN

A. Current Situation

In the 1990s, the first BCIM regional economic cooperation conference was held in Kunming, followed by a meeting each year to promote construction. In 2013, Prime Minister Li Keqiang formally proposed the promotion of the construction

of BCIM economic corridor during India's visit, and received India, Bangladesh and Myanmar response actively. Therefore, this article selects the data of Bangladesh, China, India, and Myanmar on Japan's exports from 1995 to 2016 to analyze the trade exports and share of BCIM countries to Japan in the past 20 years. As shown in Table I.

B. Analysis

As can be seen from Table I, from 1995 to 2016, China's exports to Japan accounted for 95.95% of the four countries of Bangladesh, China, India, and Myanmar, which had an absolute advantage. India's exports to Japan accounted for 3.58%, Myanmar 0.26%, and Bangladesh 0.21%, almost negligible compared to China. The export volume of the four countries to Japan has shown an overall upward trend.

TABLE I. UNDERGRADUATE-AND-ABOVE-LEVEL CFCRS APPROVE BY MOE OVER THE YEARS(TILL 2017)

| Countries year | China to Japan | India to Japan | Bangladesh to Japan | Myanmar on Japan |
|----------------|----------------|----------------|---------------------|------------------|
| 1995 | 28466.69 | 2026.60 | 103.35 | 85.50 |
| 1996 | 30886.22 | 2215.60 | 103.59 | 93.89 |
| 1997 | 31838.58 | 2005.96 | 86.91 | 89.97 |
| 1998 | 29660.11 | 1892.07 | 63.75 | 81.35 |
| 1999 | 32410.60 | 1652.00 | 71.29 | 92.19 |
| 2000 | 41654.31 | 1685.37 | 66.88 | 75.49 |
| 2001 | 44940.52 | 1794.48 | 62.00 | 64.58 |
| 2002 | 48433.84 | 1510.44 | 55.84 | 69.81 |
| 2003 | 59408.70 | 1864.03 | 51.49 | 88.27 |
| 2004 | 73509.04 | 1709.29 | 61.60 | 113.62 |
| 2005 | 83986.28 | 2127.91 | 64.36 | 128.23 |
| 2006 | 91622.67 | 2481.26 | 71.76 | 155.87 |
| 2007 | 102008.59 | 2868.12 | 74.08 | 184.40 |
| 2008 | 116132.45 | 3858.48 | 84.30 | 194.13 |
| 2009 | 97867.66 | 3025.70 | 114.57 | 200.57 |
| 2010 | 121043.49 | 3629.54 | 164.98 | 215.15 |
| 2011 | 148270.49 | 5091.24 | 290.23 | 310.01 |
| 2012 | 151621.83 | 6328.54 | 349.98 | 373.64 |
| 2013 | 150132.45 | 6100.06 | 469.04 | 779.98 |
| 2014 | 149391.34 | 6814.07 | 536.75 | 532.23 |
| 2015 | 135616.44 | 5385.57 | 614.22 | 486.59 |
| 2016 | 129410.00 | 4662.67 | 690.92 | 663.43 |

Source: Based on the compilation of CEIC data from Hong Kong's Central Asian Economic Database.

1) *China's exports to Japan have maintained a uniform growth in the past 20 years as a whole*

It has been affected by the economic crisis from 2008 to 2009. It has also experienced a slight decline from 2013 to 2016 but the export volume has remained at a relatively high level overall.

2) *India's export trade with Japan can be divided into two sections*

During the period from 1995 to 2002, the situation in India was turbulent and lagging. The export volume to Japan showed a declining trend. Until 2003, the Indian economy gradually returned to a period of growth. The export to Japan began to rise and showed a rising trend year by year.

3) *Again, Bangladesh's exports to Japan are divided into two periods*

Before 2008, Bangladesh's domestic economy was lagging behind, its industrial structure was irrational, its productivity was low, and its exports to Japan remained at a low level and continued to decline. In 2008, Hasina resumed its work. The prime minister, committed to controlling prices, increasing grain output and electricity supply, brought about a turnaround in Bangladesh, after which exports to Japan gradually recovered and maintained growth.

4) *In the end*

Myanmar's exports to Japan showed a slight average growth trend overall, and the increase was relatively large in recent years. Myanmar joined the WTO in 1995, but it has continued to slump due to the failure of Western countries to sanction and block foreign trade. On the other hand, Japan has been one of the countries that have provided the most assistance to Myanmar. In 2011, Myanmar initiated the process of democratization and national reconciliation, and Myanmar's exports to Japan also showed a significant increase. In 2013, it reached the highest export value to Japan in the calendar year. In 2016, Myanmar established a new government and continues to work for democratization, national reconciliation, and sustainable development reforms. Japan hopes to assist Myanmar in its efforts to achieve democratization and market economy. The Japanese government hopes to strengthen economic cooperation with Myanmar and maintain its leading position in Southeast Asia.

C. *Tendency Trend Analysis*

Comparing the export trends of the four countries to Japan, we can see from Chart I that although all four countries have shown an upward trend, China's export to Japan declined only in 2009 because of the economic crisis. But India, Bangladesh, and Myanmar's export value was almost coincide and kept at a very low level, until 2011 when India gradually exceeded Bangladesh and Myanmar. In conclusion, the reason is that, on the one hand, the economic strength and trade competitiveness of Bangladesh, India, and Myanmar are far inferior to China, they are in the most underdeveloped countries in the world, and their exports to Japan are at a relatively low level. On the other hand, BCIM countries' geographical location is close, natural resources endowments and domestic production structure are also similar, which will require further exploration if they will play a certain degree of inhibition for Japan's exports.

D. *Comparative Advantage*

1) *Because Japan has a small area and is an island nation, there is a lack of natural resources.*

a) *China is close to Japan, with low transportation costs, relatively low prices and labor costs, and China's exports to Japan are mostly chemical raw materials and coal resources.*

Production industry. According to data from the Myanmar Ministry of Commerce, in the first four months of 2017, Myanmar's CMP export revenue has reached nearly US\$700 million, and reached US\$3 billion by the end of the year. Myanmar's domestic natural resources are abundant, complementing Japan's scarce energy resources. In addition, Myanmar exports fuel and minerals to Japan.

2) *The trade competitiveness index is introduced here. It measures the proportion of the difference between the import and export trade of a country in the total volume of imports and exports.*

a) *The formula is expressed as:*

$$TC=(Xit-Mit)/(Xit+Mit),$$

Where X, M represent the export amount and the import amount respectively, i represents a country or a certain industry, a certain product. If $TC>0$, it means that the production efficiency of this kind of product is higher than the international level. The greater the numerical value of competitive advantage, the greater the advantage. Anyway, if $TC<0$, it means that the production efficiency of this kind of product is lower than the international level and it is at a competitive disadvantage.

b) *According to the Trade Competitiveness Advantage Index, calculated by Hong Kong Central Asia*

China's exports to Japan have a competitive advantage as a chemical raw material with a TC index of 0.2. Indian exports to Japan have a competitive advantage as a textile raw material with a TC index of 0.08. The product with a competitive advantage in Bangladesh is leather, with a TC index of 0.04. Myanmar's export to Japan has a competitive advantage as a garment with a TC index of 0.02.

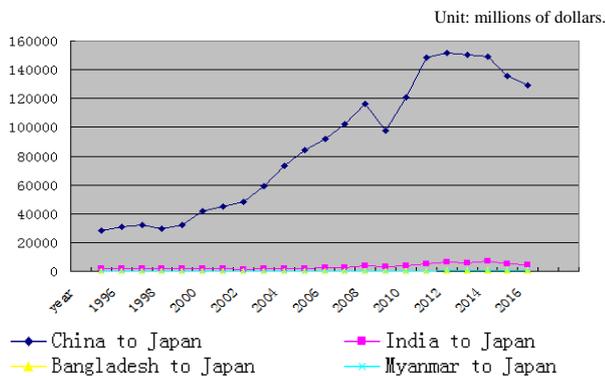


Fig. 1. Trade exports to Japan of China, India, Bangladesh and Myanmar (1995-2016)

III. ANALYSIS OF EXPORT SIMILARITY OF BCIM COUNTRIES TO JAPAN

A. Formula Equation

In order to further explore the similarities of the export structure of BCIM to Japan, the export similarity index (ESI) proposed by Finger and Kreini is used to calculate the equation as

$$ESI(xy, z) = \{ \sum_j \min (E_{axy} / E_{xy}, E_{ayz} / E_{yz}) \} \times 100.$$

Among them, ESI (xy, z) denotes the export similarity index of country x and country y in the third country market, and E_{axy} and E_{ayz} denote the export amount of commodity a from country x to country y and commodity a from country y respectively. Exports to z countries, E_{xy} and E_{yz} are the total exports of country x and country y to country z respectively.

B. Purpose

Its main purpose is to measure the economic structure characteristics or commodity competition relationship between the two countries. The index is based on the share of each product in each country's total exports and calculates the sum of the minimum share of each product's exports. The similarity index of exports varies from 0 to 1. The greater the value, the greater the similarity of the products of the two countries and the higher the level of trade competition. This paper sets a critical value of 0.3. If ESI>0.3, the similarity between exports of the two countries is considered to be high. There is a convergence issue between the two countries in terms of industrial structure. If ESI<0.3, the similarity between exports of the two countries is considered to be low, and the product complementarity is more than competition. The data from 1995 to 2016 were selected to examine the similarity index of exports from Bangladesh, China, India and Japan to Japan. As shown in chart II.

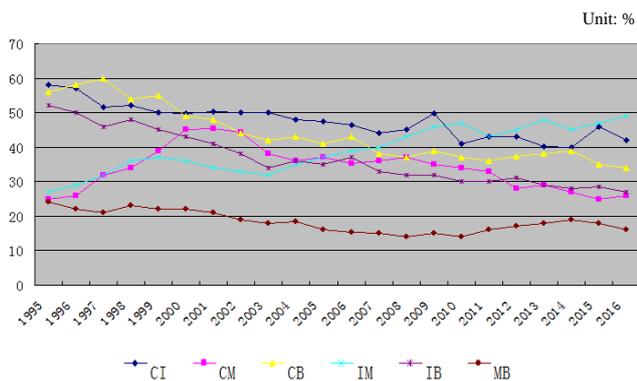


Fig. 2. Export similarities among Bangladesh, China, India and Myanmar to Japan (1995~2016)

C. Analysis

According to Chart II, the following conclusions can be drawn: From 1995 to 2000, except for Myanmar-Bangladesh, the export similarity index among China-India, China-Bangladesh, China-Myanmar, India-Bangladesh and India-Myanmar are at a high level.

- The similarity index between China and India is the highest and the volatility is relatively flat, with an average of 50%. This shows that the level of similarity between China and India has always been relatively high, and there is a serious industrial convergence issue.
- The similarity of the overall exports between China and Bangladesh has remained at around 40%. There is also a problem of industrial convergence. However, in the past two years, there has been a downward trend, and the industrial convergence is yet to be further reduced.
- The similarity index between China and Myanmar on Japan's exports is relatively large, averaging about 32%. There is also a certain problem of industrial convergence, which has improved in recent years. The similarity index for exports to Japan is less than 30% and shows a certain complementarity in the industrial structure.
- The similarity index between India and Myanmar on Japan's exports shows a continuous upward trend. In 1995, it was only 28%. It increased to 49% by 2016, indicating that the convergence of the industrial structure in the two countries has become more serious and needs to be adjusted.
- The similarity index between India and Bangladesh on Japan's exports shows a declining trend. At present, the industry convergence has been greatly reduced, and the degree of industrial complementarity is greater than competition. Sixth, the similarity between Myanmar and Bangladesh's exports to Japan has been low, staying at around 20%, indicating that the two countries have a good industrial complementarity and can fully exert their comparative advantages and increase their exports.

IV. CONCLUSIONS AND POLICY RECOMMENDATIONS

Under the continuous advancement of the BCIM economic corridor, Bangladesh, China, India and Myanmar have achieved sustained and rapid development. Putting the four countries in the international environment to examine their exports to third-party markets can clearly compare the real trade strength and future development potential. Judging from the export trade situation of BCIM to Japan in the past 20 years, China far exceeds India, Bangladesh, and Myanmar to occupy an absolute dominant position, followed by India. The exports of Bangladesh and Myanmar to Japan are relatively small, almost ignore. Based on the current status of the four countries' exports to Japan, the following reference measures are proposed.

China's exports to Japan in the four countries have an absolute advantage. Therefore, China must play a leading role in giving India, Bangladesh, and Myanmar the support and assistance in foreign trade policies and guidelines. India, Bangladesh and Myanmar must formulate appropriate export encouragement policies in accordance with their own national conditions, and expand trade exports to the international market

through fiscal policies, credit policies, and organizational policies.

Although the absolute value of India, Bangladesh, and Myanmar exports to Japan is relatively lower than that of China, the similarity index between China-India, China-Bangladesh, India-Bangladesh is relatively high, and there is a similar convergence problem in their industrial structure. Therefore, for the convergence of industrial structure, China can make full use of its favorable conditions, develop technology-intensive and capital-intensive industries, promote the upgrading of industrial structure, and promote the development of export-oriented economy. Through the reform of the domestic economic system, India, Bangladesh, and Myanmar can quickly enter the fast lane of export trade, strengthen infrastructure construction, give full play to their advantages in resources, and vigorously develop agriculture, forestry, animal husbandry, and processing industries. And improve the depth of processing on the basis of the original to change the advantages of resources to economic advantages.

With regard to the development trend of low export similarly levels in Myanmar-Bangladesh, we can use the complementary advantages to form complementary industrial systems within the sub-region, to cooperate and divide the production of the same type of products. In the third-party market, we can form a division of labor and export complementary products, and accelerate the promotion of the development of the BCIM economic corridor towards diversified development.

ACKNOWLEDGMENT

In the writing of this paper, I received help from the National Natural Science Foundation of China and the CEIC data of the Hong Kong Economic and Central Asian Database. Thanks a lot for the help.

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