Analysis of Comparative advantages of tea trade between China and Countries along the “Belt and Road Initiative”

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Abstract. With the proposal of “Belt and Road Initiative” national strategy, the foundation of China’s tea trade development on the ancient Silk Road was increasingly shifting to countries and regions along the route, and the export volume was expanding year by year, encountering rare new opportunities for development. Based on the development of tea trade between China and the countries along the “Belt and Road Initiative” route, this paper selected two indicators of competitiveness: international market share and display comparative advantage, to measure the international competitiveness of tea export in these countries. On this basis, it was concluded that China’s foreign trade in tea was in line with the principle of comparative advantage, China should grasp the new opportunities for the development of tea export trade under the guidance of the national “Belt and Road Initiative” policy.

1. Introduction
“Belt and Road Initiative” was a new strategy for the development of China's national economy, involving 65 countries and regions along the route. With the continuous strengthening of economic and trade cooperation between the countries along the “Belt and Road Initiative” and China, China's tea exports were increasingly shifting to the countries and regions along the route. The volume of exports was expanding year by year, and encountering rare new opportunities for development.

2. Development of tea trade in the countries along the “Belt and Road Initiative” route

2.1 Status of tea production in the countries along the “Belt and Road Initiative” route
The latest statistics showed (Table 1): In 2017, the output of the world’s tea was 5686387 tons, an increase of 12500 tons over the previous year, an increase of 2.2%. Among the top ten tea producing countries in the world, there were seven countries along the “Belt and Road Initiative” route, with a total tea production of 4613800 tons, accounting for about 81%. As a major producer of tea, China had an area of 43.956 million mu of tea gardens in 2018. The annual dry tea production was 2.616 million tons, an increase of 4.8% over the previous year(data from China Tea Circulation Association), which was stable in global tea production. Ranked first, indicating that China had a stable source of supply in tea export trade.
Table 1. The top ten countries of total world tea production in 2017.

| country   | China | India | Argentina | Vietnam | Sri Lanka | Indonesia |
|-----------|-------|-------|-----------|---------|-----------|-----------|
| Production| 2.550 | 1.279 | 0.082     | 0.172   | 0.307     | 0.125     |

| country | Turkey | Japan | Bangladesh | Kenya | Other countries |
|---------|--------|-------|------------|-------|----------------|
| Production| 1.024  | 0.077 | 0.079      | 0.440 | 0.474          |

Note: Country names underlined for countries along the “Belt and Road Initiative” route; Source: Latest statistics of the International Tea Committee. Units: million tons.

2.2 Status of tea import and export trade in the countries along the “Belt and Road Initiative” route

The latest statistics showed (Table 2): In 2017, the total amount of world tea exports was 1778386 tons, and the total import volume was 1693100 tons. Among the top ten tea exporting countries in the world, there were five countries along the “Belt and Road Initiative” route. Exports account for about 60% of global tea exports. Kenya ranked first in world tea exports, accounting for 23%. Followed by China, accounting for 20%. At the same time, among the top ten tea importing countries in the world, there were six countries along the “Belt and Road Initiative” route. The import volume accounted for 35.69% of the total global tea imports. The import and export demand was not from the same country, indicating that the main import and export of tea in these countries is inter-industry trade. We could see that China, as a major producer of tea, conducted tea import and export trade along the “Belt and Road Initiative” route countries. Although it faced fierce export trade competition, it had 4.4 billion people in 65 countries along the route. There was a great demand for tea in the market. China’s tea import and export trade in countries along the route, the development space was still relatively large.

Table 2. The top ten countries of world tea import and export in 2017.

| country     | Export volume | country | Import volume |
|-------------|---------------|---------|--------------|
| Kenya       | 4157.15       | Pakistan| 1750.11      |
| China       | 3552.58       | Russia  | 1600.00      |
| Sri Lanka   | 2781.95       | America | 1263.28      |
| India       | 2406.80       | Britain | 1089.86      |
| Vietnam     | 1340.00       | CIS     | 880.00       |
| Indonesia   | 550.00        | Egypt   | 780.00       |
| Argentina   | 766.00        | Morocco | 730.00       |
| Uganda      | 450.00        | Iran    | 627.00       |
| Malawi      | 292.90        | Dubai   | 580.00       |
| Tanzania    | 275.12        | Iraq    | 406.00       |
| Other countries | 1211.36  | Other countries | 7224.75 |

Note: Country names underlined for countries along the “Belt and Road Initiative” route; Source: Latest statistics of the International Tea Committee; Units: million tons.

3. The current situation of China’s tea exported to countries along the “Belt and Road Initiative” route

3.1 Status of China’s tea exports route

China was one of the world’s largest tea producers and consumers, and played an important role in tea international trade. Among the world’s tea exporting countries, China had the advantages of wide planting and many types of tea. It had obvious advantages in both Oolong tea and Pu’er tea, China was the only country in terms of production and export.
According to the latest data from China Customs (Figure 1 and 2), China’s tea exports in 2018 were 364,742 tons, an increase of 2.7% over the same period of last year. The export value increased by 10.42% over the same period last year. It was inseparable from China’s continuous improvement of tea product quality, increasing marketing channels, broadening the trade market, and proposing trade policies such as the “Belt and Road Initiative”.

3.2 Status quo of China's tea exports in countries along the “Belt and Road Initiative” route

According to China Customs Statistics (Table 3): China’s tea exports in 2018 were 364,742 tons. Among the 65 countries and regions along the “Belt and Road Initiative” route, except Laos, Palestine, Cyprus, Maldives, Nepal, Bhutan, Georgia, Moldova, Bosnia and Herzegovina, Albania, Macedonia. All 53 countries and regions imported tea from China. China’s tea was widely distributed and spreaded over the world. According to the calculation in Table 3, the total amount of China’s tea exports to the top 20 countries was 299,700 tons in 2018. Among the 20 countries, only Uzbekistan, Russia, Pakistan, Thailand and Vietnam were countries along the “Belt and Road Initiative” route, accounting for 15.83% of China's tea exports. This showed that the proportion of tea products exported to the countries along the “Belt and Road Initiative” route was relatively small in the whole tea export trade. Chinese tea enterprises should expand the tea market along the border and speed up the pace of “going out”.

Source: China Industry Information Network.
Figure 1. Statistics on China’s tea amount of exports in 2008-2018.

Source: China Industry Information Network.
Figure 2. Statistics on China’s tea volume of exports in 2008-2018.
Table 3. China’s tea exports country statistics in 2018

| Order number | country   | Export volume / kg | Order number | country   | Export volume / kg |
|--------------|-----------|--------------------|--------------|-----------|--------------------|
| 1            | Morocco   | 77,562,486         | 11           | Japan     | 13,355,121         |
| 2            | Uzbekistan| 24,621,983         | 12           | Germany   | 10,855,860         |
| 3            | Senegal   | 17,868,451         | 13           | Benin     | 8,703,143          |
| 4            | America   | 15,494,689         | 14           | Cameroon  | 8,564,137          |
| 5            | Russia    | 14,938,464         | 15           | Pakistan  | 8,094,467          |
| 6            | Ghana     | 14,883,085         | 16           | Libya     | 7,423,873          |
| 7            | Algeria   | 14,475,175         | 17           | Thailand  | 5,757,117          |
| 8            | Hong Kong | 14,126,183         | 18           | Mali      | 5,591,195          |
| 9            | Mauritania| 14,121,328         | 19           | France    | 4,825,317          |
| 10           | Togo      | 14,041,910         | 20           | Vietnam   | 4,341,746          |

Note: Country names underlined for countries along the “Belt and Road Initiative” route;
Source: China Customs Statistics.

4. Analysis of comparative advantage of tea trade in China

In international trade, when analyzing and comparing the international competitiveness of similar products in various countries, the competition result evaluation method was usually used for evaluation. Combined with the data of the United Nations trade database, this paper selected two indicators of competitiveness: international market share and display comparative advantage, to measure the international competitiveness of tea export in these countries, and evaluate and empirically analyze the comparative advantage of tea trade in China and the countries along the “Belt and Road Initiative” route[1].

4.1 International market share MS

International market share reflected the change of a country’s international competitiveness or product competitiveness. MS was the most explicit indicator of the international competitiveness of a product. When a country's international market share was larger, the international market share of the product was greater, and the international competitiveness of the product was stronger, and the product was competitive in the international market. MS was widely used in the comparison of the product's international market competitiveness. The calculation method referred to the literature[2].

Formula for calculating international market share index:

\[
MS_{ij} = \frac{X_{ij}}{X_{wj}}
\]  

(1)

Where: MSij indicated the international market share of i country j products; Xij indicated the total export volume of i country j products; Xwj indicated the total export volume of the world j products.

The calculation results in Table 4 showed that in the past five years, Kenya, China, Sri Lanka and India had the highest market share in the international market and were highly competitive. Among them, Kenya had the highest market share and the strongest competitiveness. However, among the countries along the “Belt and Road Initiative” route, China had the highest MS and strong competitiveness.

Table 4. International market share of major tea exporting countries in 2014-2017(%)
4.2 Display comparative advantage index RCA

RCA was the ratio of a country’s product to its total value of exports and the world’s total share of that product share of a product to the world’s total value of exports. It was the most powerful indicator of a country’s international competitiveness. The calculation method referred to the literature[2].

Formula for calculating display comparative advantage index:

\[ RCA_{ij} = \left( \frac{X_{ij}}{X_{it}} \right) \left( \frac{X_{wj}}{X_{wt}} \right) \]

Where: RCA\(_{ij}\) indicated the comparative advantage index of i country j products; X\(_{ij}\) indicated the export value of i country export product j; X\(_{it}\) indicated the export value of all products in country i; X\(_{wj}\) indicated the total export value of the jth product in the world; X\(_{wt}\) indicated the total export value of all products in the world.

Usually RCA index was compared with 1 for comparison. If the RCA was greater than 1, it meant that the i country j product had a stronger comparative advantage than other countries, and the larger the value, the more obvious the comparative advantage; If the RCA index was less than 1, it meant that the products exported by the country had no comparative advantage and were at a competitive disadvantage, and the smaller the value was, the more obvious the comparative advantage was.

Table 5. RCA Index of the four largest tea-producing countries in the world

| Time   | 2012 | 2013 | 2014 | 2015 | 2016 |
|--------|------|------|------|------|------|
| Kenya  | 670.12 | 685.34 | 713.37 | 587.24 | 438.54 |
| Sri Lanka | 380.67 | 379.08 | 422.12 | 356.60 | 263.88 |
| China  | 2.67 | 2.88 | 2.60 | 2.75 | 1.54 |
| India  | 15.78 | 17.21 | 16.20 | 15.66 | 5.46 |

Source: United Nations Trade Statistics Database.

Table 5 was based on the calculation and analysis of relevant data on tea export trade in Kenya, Sri Lanka, China and India in 2012-2016. It could be seen that China’s RCA was greater than 1, indicating that China had a certain comparative advantage. However, compared with the other three countries and even those along the the “Belt and Road Initiative” route, the apparent comparative advantage index of tea exports in China was still very low, and it was the country with the least obvious advantage among the four countries.

5. Conclusion

"Belt and Road Initiative" had promoted the development of air ports, railways, highways and other transportation routes, and had brought more convenient and fast trade methods to the tea export economy[3]. "Belt and Road Initiative" had become the most important channel for Chinese tea to go to the world[4].

Combined with the above analysis, China’s tea export had not only competitive advantages, but also a certain competitive disadvantage. Against the background of Belt and Road Initiative’s “Strategy” and “Internet” era, China should take the advantage of tea export trade in countries along the “Belt and Road Initiative”, and arrange countries along the route to continuously improve the logistics infrastructure, innovate the tea circulation model, and carry out international B2B and other cross-border e-commerce business[5]. At the same time, China should adopt reasonable plans and countermeasures to improve the competitiveness of China's tea export economy, innovate the models and roads of China's tea industry in the development of international trade, and actively develop the tea market of the countries along the road of “Belt and Road Initiative”. Effectively improve the core competitiveness of enterprises, better spread the tea culture in China, promote the stable development of tea export economy in China, and speed up the process of tea internationalization in China[6].
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