Competitiveness Indonesia tea in international market

M Khaliqi¹*, H R H Gurning², R R Novanda³ and O N Simamora¹

¹Faculty of Agriculture, Universitas Sumatera Utara, Medan, Sumatera Utara, Indonesia.
²Faculty of Economic and Business, Universitas Sumatera Utara, Medan, Sumatera Utara, Indonesia.
³Faculty of Agriculture, Universitas Bengkulu, Bengkulu, Indonesia.

E-mail: *muhammadkhaliqi@usu.ac.id

Abstract. The condition of the international market which has become a free market raises various challenges in increasing the value of exports for tea producers, especially Indonesian tea producers. In the international market competition, Indonesian tea producers not only face an increasing number of production and export volumes in the international market, but also must be able to consider aspects of consumer orientation. Thus, this will increase the superiority of Indonesian tea in the international market, both competitive advantage and comparative advantage. By using data on the export value of tea commodities 2001-2017 from 6 major tea exporting countries, this paper aims to identify the comparative and competitive advantages of Indonesian tea in the international market. It was analysed by using RCA and ECI. The Indonesian tea trade still has a chance to be increased because of the competitiveness of Indonesian tea especially green tea with the code HS 090210 and HS 090220 has a comparative and competitive advantage.

1. Introduction

Competitiveness in international trade is one of the key and important problems in the trade of agricultural commodities. The openness of the international market causes the level of competition in the trade of agricultural commodities in the international market is relatively high. The new producing countries may reduce previous major exporting countries market share [1]. The high level of competition requires producing countries to be able to continue to adjust or improve the competitiveness of the products being traded [2]. In other words, agricultural products must have a comparative advantage compared to other producing countries.

Indonesia as one of the countries that rely on trade in agricultural commodities cannot avoid the development of these international market conditions. Indonesian agricultural commodities contributed 13 percent to Indonesia's GDP in 2018 with the plantation subsector having the highest contribution. Plantation products that are traded with this raw material condition have a relatively low competitiveness value when compared to processed products. Some plantation commodities that are Indonesia's mainstay in the international market are oil palm, rubber, cocoa and tea.

On the other hand, the development of tea exports in the international market has a positive trend. Growth in the value of tea exports in the international market in the last 10 years (2009-2018) reached 28%. This growth indicates an increase in demand in the global market for the commodity of tea. Several factors can influence the decline in Indonesian tea exports, such as first, the priority of Indonesian
plantation commodities has shifted to commodities that have a relatively higher export value. Second, the total land area of Indonesia's tea plantations continues to experience a decline in both state-owned, private and community plantation estates. Third, the global market conditions that have turned into free markets.

The international tea market is dominated by China with a market share of 23%. Whereas Indonesia only has a relatively low market share value of 1.4% in 2018. The potential of the international tea market and the relatively low share of the Indonesian tea market should be able to be utilized by the Indonesian government to be able to increase market share and make tea as a commodity supporting the national economy [3]. Indonesian tea producers in dealing with international market competition are not only limited in increasing the number of production and export volumes in the international market but are able to consider aspects of consumer orientation [4]. Therefore, it will increase the superiority of Indonesian tea in the international market, both competitive and comparative advantages. This condition is the basis for this research. This study aims to analyse the competitiveness of Indonesia's tea trade in the international market.

2. Research methodology

2.1. Data types and sources

The data used in the form of annual time series data of the largest tea exporting countries namely China, Sri Lanka, India, the United Kingdom, Germany and Indonesia from 2001 to 2017. These data are data collected from data published by the World Integrated Trade System (WITS), Trade Map, Ministry of Agriculture and other library sources that can provide supporting information. Data of tea that were black and green tea groups classified using the 1996 Harmonized System (HS) in 4 groups, HS 090210, HS 090220, HS 090230 and HS 090240.

2.2. Competitiveness position analysis

Indicators used in empirically analysing the concept of competitiveness are using the Revealed Comparative Advantage (RCA) Index [2], [5]–[7] and the Export Competitiveness Index (ECI). The RCA concept was developed by Balassa (1965), this concept is used to compare the trade performance of a country's commodities with the trade performance of a group of countries. The RCA index can be calculated as bellows:

$$RCA_{ij} = \frac{X_{ij}}{X_i} \div \frac{X_{wj}}{X_w}$$  \hfill (1)

Which $X_{ij}$ is an export of product j from country i, $X_i$ is total export of country i, $X_{wj}$ is world export of product j and $X_w$ is a total world export. The value of RCA has a range that is delivered 0 and $+\infty$, and neutral comparative advantage is 1. If the value of is RCA > 1 means that the country has a high comparative advantage in trading products, if the RCA value <1 then the country has a low comparative advantage. RCA values that do not have this limit make the development of other concepts, namely Revealed Symmetric Comparative Advantage (RSCA). The concept of the RSCA is to limit the RCA index to -1 to 1. A product is said to have competitiveness if the value of the RSCA is positive while on the contrary if the value of the RSCA is negative then the product has no competitiveness. The RSCA formula is as bellows:

$$RSCA = \frac{(RCA - 1)}{(RCA + 1)}$$  \hfill (2)

The ECI method illustrates the ratio of tea export market shares in international markets in certain periods with the ratio of tea export share in the previous period. The ECI value will give an idea whether an industry has succeeded or failed in after the growth of international markets. The ECI value will show
the ability of Indonesian tea to compete with other exporting countries in the international market [3]. Mathematically the ECI formula is as below:

\[ ECI_{ki} = \frac{\left( \frac{X_{kt}}{X_{wt}} \right)}{\left( \frac{X_{kt}}{X_{wt}} \right)_{t-1}} \]  

(3)

Which \( X_{kt} \) is the value of tea exports by country i, \( X_{wt} \) is the value of tea exports on the international market, \( t \) is the current time period and \( t-1 \) is the previous period. Value of \( ECI > 1 \) will show that Indonesian tea has increased competitiveness by following growth in the international market. On the other hand, the value of \( ECI < 1 \) will show Indonesian tea has decreased competitiveness and unable to keep up with export growth in the world market.

3. Results and discussion

3.1. Development of Indonesian tea in the international market

The demand for international tea has a positive trend. This contrasts with Indonesia's tea export trends in the international market which has a negative trend. This decline could show increased competition in the international tea market which can be seen in Figure 1.

![Figure 1. Development of tea exports in international markets](image)

The largest tea export in the international market is still dominated by China. Besides China, several other exports countries have positive trends in the conducting trade in international markets. Thus suppressing the growth of Indonesian tea exports in International market. The lower value of Indonesian tea exports has resulted in tea not being a priority commodity for estate crops developed by the Indonesian government.

3.2. Competitiveness Indonesia tea in international market

Export competitiveness is one of the capabilities of a commodity to be able to penetrate international markets and survive in international markets. Tea in International market is divided into 2 types namely green tea and black tea which are classified into 4 HS codes namely HS 090210, HS 090220, HS 090230 and HS 090240. In this study, Indonesian tea competitiveness will be identified by the HS code. The calculated RCA value will be transformed into the RSCA value.
Green tea in international trade is classified into 2 HS codes, 090210 and 090220. Values of RSCA HS 090210 (Figure 2) from Sri Lanka, China and Indonesia which have relatively stable values. Sri Lanka and China have RSCA values that are not always positive, meaning green tea commodities
originating from these countries have relatively high competitiveness so they are able to keep up with changes in international market demand. This RSCA value illustrates the competitiveness of Indonesia's green tea commodity, which is still able to compete with other exporting countries, although its value has decreased from 2001-2017. But the decline experienced by Indonesian green tea with HS 090210 is not too significant and is not too depressed by global market conditions. Another case with HS 090220, fluctuations in RSCA values are so high (Figure 3). The value of RSCA HS 090220 Indonesia has decreased very dramatically when compared to 2001. This negative RSCA value indicates a decline in the value of HS 090220 commodity trading due to relatively low competitiveness so that it is unable to keep pace with the growth of the green tea market in the international market, especially with HS 090220 [8].

![Figure 5. Values of RSCA HS 090240](image)

Something that is almost similar to green tea with the code HS 090220, Indonesian black tea in both HS namely HS 090230 and HS 090240 has a declining trend in RSCA values. The most drastic change in the value of RSCA was experienced by HS 090230, namely in 2006 to 2008 (Figure 4). This relatively significant change in value indicates that Indonesian black tea is losing market in International market so that it cannot compete with black tea from other exporting countries. Looking at the value of Indonesian black tea exports, it can be said that Indonesian black tea is the backbone of the export of Indonesian tea commodities in the international market. However, due to market changes and high competition, Indonesia's black tea commodity experienced a significant decrease. The decreasing also occurred in HS 090240 (Figure 5), the trend of the RSCA value which continues to decline even though it has not yet reached a negative value but has been able to give an indication to the Indonesian government if it is unable to improve the domestic black tea industry then Indonesia will lose the market again like HS 090220 and HS 090230.

The ECI index illustrates the extent to which commodities can compete competitively in increasingly open international markets so that they have a competitive advantage. ECI index has a very fluctuating value this happens because the ECI index assesses the ratio between market share in year t and market share in year t-1. For green tea commodity with HS code 090201, the ECI index of India experienced a very drastic growth in 2007 and 2009 (Figure 6) after the following year the condition of green tea exports from the country of India returned to its normal position. The same thing happened to Indonesia where in 2014 (Figure 7) was able to take advantage of changes in the green tea market in the international market so that the ECI index was relatively high compared to the previous year. This significant change in index value indicates that Indonesian green tea still has a competitive advantage, especially commodities with the HS code 090220, although the RCA value continues to decline which indicates the diminishing comparative advantage of these HS products.
Figure 6. Values of ECI HS 090210

Figure 7. Values of ECI HS 090220

Figure 8. Values of ECI HS 090230
The ECI index for Indonesian black tea on the international market at HS 090230 had a significant change in the early 2001 period. After that year the ECI index of HS 090230 experienced fluctuations (Figure 8). This needs to be observed by the Indonesian government so that the Indonesian black tea industry does not experience loss of market share for the following years.

4. Conclusion
The tea market share in the international market is controlled by China, Sri Lanka, India, Germany, the United Kingdom, and Indonesia by 51%. The development of the international tea market has a positive trend, in other words, the demand for tea in the international market has increased every year. Indonesian tea still has a chance to increase its trade because the competitiveness of Indonesian tea especially green tea with HS code 090210 still has a comparative advantage. This is illustrated by the value of the RSCA which is still positive even though it has decreased every year. Whereas if you look at the ECI index of green tea with HS 090220 has a competitive advantage from the average ECI index which is positive. So that Indonesia’s green tea commodity still has a competitive and comparative advantage in the international market. On the other hand, Indonesian black tea is increasingly losing market in the international market. This condition is reflected in the value of the RSCA which continues to decline and also the ECI index which has a negative average value. This index indicates that Indonesian black tea has a competitive and comparatively low advantage so that it cannot keep up with the growing demand for tea in the international market.

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