Analysis of Export Competitiveness of Indonesian Cocoa Beans in The International Market

Wisnu Arum Wulandari, Tatang Widjojoko

Agricultural Social Economics Department, Jenderal Soedirman University

Email: tatang.widjojoko@unsoed.ac.id

Abstract. Cocoa is one of the plantation commodities that has an important role in economic activity in Indonesia. Cocoa is also one of Indonesia's export commodities which is quite important as a source of foreign exchange. This study aims to compare the competitiveness of Indonesian cocoa exports with major exporting countries of world cocoa beans such as Ivory Coast, Ghana, Nigeria and Cameroon from 2009 to 2018. The comparable cocoa commodity is cocoa beans. This study uses descriptive analysis with the Revelaved Comparative Advantage (RCA) approach and the Trade Specialization Index (TSI). Revelaved Comparative Advantage analysis is used to determine the level of competitiveness of Indonesian cocoa beans, Ivory Coast, Ghana, Nigeria and Cameroon, while ISP is used to determine Indonesia's position as an exporter or importer of cocoa beans. RCA analysis shows that Indonesian cocoa commodities have a comparative advantage in the international market in the 2009-2018 period, while ISP analysis shows that in the 2009-2018 period Indonesia tended to be a cocoa bean exporter country.

1. Background

The agricultural sector has a fairly important role in economic activity in Indonesia, this can be seen from its contribution to Gross Domestic Product (GDP) which is quite large, which is around 12.81 percent in 2018 or is the third place after the Manufacturing and Wholesale Trade industry sector and Retail, Car and Motorcycle Repair. During the economic crisis, the agricultural sector was strong enough to face economic shocks and proved reliable in the recovery of the national economy (Pusdatin, 2019).

According to Yurike (2019), currently the agricultural sector is also at the stage towards sustaining high growth (sustaining growth). One of them is the plantation sub-sector which is still the superior for the agricultural sector in Indonesia. The contribution of the plantation sub-sector to GDP was around 3.29 percent in 2018 or first in the Agriculture, Animal Husbandry, Hunting and Agricultural Services sectors. This sub-sector is a provider of raw materials for the industrial sector, absorbs labor, and earns foreign exchange (Pusdatin, 2019).

Cocoa is one of the plantation commodities that has an important role in economic activity in Indonesia. Cocoa is also one of Indonesia's export commodities which is quite important as a source of foreign exchange.

One of the agricultural products that has contributed a lot to the country's foreign exchange through exports is the cocoa commodity. Cocoa is one of the plantation commodities that has an important role in economic activity in Indonesia. The annual production of Indonesian cocoa reaches 490,000 tonnes, exported in the form of 365,000 tonnes of beans and 121,000 tonnes of domestic consumption or processing. Exports of cocoa are still dominated by the sale of raw cocoa beans without going through the fermentation stage, while to increase the selling value of cocoa beans, it is necessary to pass the stage.

Ivory Coast, Ghana, Indonesia, Nigeria, and Cameroon are the five largest cocoa producing countries in the world. Data released by the Food and Agriculture Organization (FAO) shows that Ivory Coast is the largest cocoa producer in the world, Ghana is in second place, Indonesia is in third, Nigeria is in fourth and Cameroon is in fifth. Indonesia contributes 14.09% of cocoa to world cocoa needs. 85.91% of the world's cocoa needs are still controlled by other countries such as Ivory Coast 35.75%, Ghana 18.01%, Nigeria 6.82%, Cameroon 5.88%, Brazil 5.28%, Equador 3.56% and the remaining 10.62% came from other countries.

During the 2008-2017 period, the development of Indonesian cocoa consumption fluctuated but with an encouraging trend due to its positive value. Consumption of instant chocolate is greater than consumption of cocoa powder. The consumption of instant chocolate in Indonesia during this period increased by an average of 17.32% per year, followed by an increase in the consumption of cocoa powder by 58.93% annually. A very significant increase in chocolate consumption occurred in 2012, where the consumption of cocoa powder reached 83.60 grams / capita, exceeding the consumption of instant chocolate, which was 54.60 grams / capita. The increasing trend of chocolate consumption is also influenced by the rise of coffee shops or cafes that provide chocolate or chocolate drinks as a mixture in coffee drink processing on the menu list (Pusdatin, 2019).

Indonesia's cocoa import volume is nominally lower than its export volume, but has a significant upward trend, reaching 29.18% annually. The highest volume of cocoa imports in 2018 reached 289,002 tons, while the largest increase occurred in 2017 of 156.9% to 270,172 tons from 105,152 tons previously (Pusdatin, 2019).

In general, although the volume of Indonesian cocoa exports has increased, imports are still being carried out primarily to meet the needs of the domestic food and beverage industry. The Minister of Trade (2019) said that currently the cocoa and chocolate processing industry in Indonesia is facing the challenge of continuity in the supply of raw material for cocoa beans in the country, which is still not sufficient for the needs of the cocoa and chocolate processing industry. Imports of cocoa beans for Indonesia's industrial raw material needs reached 226 thousand tons in 2018, while domestic supply only reached 32.5% of the industry's needs. The partnership between industry and exporters and farmers is one way to answer this challenge. Cocoa farmers have the opportunity to make even greater contributions so that domestic cocoa production does not experience a decline.

The Chairperson of the Indonesian Cocoa Council (2019) said that the decline in the amount of Indonesian cocoa production was influenced by several factors. The reduction in planted area from previously 1.6 million ha to only 1.2 million ha, is added by the number of damaged and old cocoa plants.

The things that cause the low productivity and quality of Indonesian cocoa are caused by the Cocoa Fruit Borer (CPB). Conopomorpha cramerella is a very destructive pest on the cocoa crop and can reduce production by up to 90%. The decline in production due to C. cramerella attacks is estimated at 60,000 tons per year, equivalent to 90 billion rupiah (Alam, 2009). Cocoa pods that are hit by CPB attacks can continue to grow as if there was no attack, so the infected pods are no different from healthy cocoa pods. The damage caused by CPB is in the form of damaged seeds, wrinkled seeds and the appearance of a dark color on the seed coat so that it can reduce the weight and quality of the product. Losses caused by CPB are a result of a decrease in product weight and quality as well as an increase in harvest costs because separation of healthy seeds from damaged seeds takes a long time (Teddy, 2000). This makes the quality

of cocoa beans very important to pay attention to. According to Hatmi and Rustijarno (2012), the quality of cocoa beans is a concern for consumers because cocoa beans will be used as raw material for food and beverages.

The low quality of Indonesian cocoa is also caused by cocoa beans that are rarely fermented first, whereas the quality of the beans that have been fermented is better than those that have not been fermented. Most of the cocoa farmers still sell cocoa beans that have not gone through the fermentation process. The problem of cocoa processing at the farm level is the lack of knowledge of cocoa bean processing technology and the absence of a standard procedure to produce quality dry cocoa beans. The fermentation process of cocoa before export is considered important to increase the competitiveness of national cocoa, as well as to respond to opportunities for the rising trend in the price of mainstay plantation commodities in the world market. The quality of the cocoa will be directly affected, and the aroma and color of the cocoa beans will be optimal. In addition, fermented cocoa beans can be used from the fat, cake, and paste. The fermentation process will produce cocoa with a taste equivalent to cocoa originating from Ghana (Melia, 2017).

In addition to fermentation, to increase the selling value of cocoa is to process cocoa into semi-finished ingredients or into processed products such as cocoa powder, pasta, popular food and beverage ingredients. Finished or semi-finished goods have a higher value when compared to raw goods.

The government is paying more attention to agriculture, especially cocoa by issuing a series of production and trade policies for processed cocoa products for the development and enhancement of cocoa competitiveness. Indonesian cocoa has a great opportunity to dominate the Southeast Asian market and even the world, with competition that is quite tight to face free trade.

The large potential for Indonesian cocoa exports is certainly a challenge, seeing the importance of cocoa as a contributor to the country's economy, so to find out how much Indonesian cocoa is capable of in the world market, researchers feel the need to conduct research related to an analysis of the competitiveness of Indonesian cocoa beans exports in the international market . The aims of this research are analyzing the development of Indonesian cocoa beans, analyzing the comparison of the competitiveness of Indonesian cocoa beans with the world’s four largest cocoa production centers, analyze Indonesia’s specialization for importers or exporters of cocoa beans.

2. Research Method

This research was conducted by collecting data from government agencies and related international agencies online regarding Indonesian cocoa export data. The research was conducted in August 2020. The method used is the case study method. The type of data used is secondary data in the form of a time series for 10 years, from 2009 to 2018. This study uses descriptive analysis with the Revelaved Comparative Advantage (RCA) approach and the Trade Specialization Index (ISP)

2.1. Revealed Comparative Advantage (RCA) Analysis

Revealed Comparative Advantage (RCA) is widely used in practice to determine a country's weak and strong sectors. The index most often used in this regard is called the Balassa index (Gandolfo, 2004). The RCA value is a value that measures the export performance of a commodity from a country by evaluating the role of the export of a commodity in the country's total exports, compared to the share of the commodity in international trade (Kuncoro et al., 2008).

This measure captures the extent to which the country's exports are more than the products of the average country. Given the reference country group the Balassa index basically compares the share of that country's export product category to the share of product categories in the reference group (for example world exports as a whole). To analyze the comparative advantage of a particular commodity in a country,

we can use RCA (Revealed Comparative Advantage) which aims to compare the export market share of a certain sector of a country with the market share of a certain sector of the country or other producers.

According to Wibowo and Kusrianto (2010), the purpose of using RCA is to measure the comparative advantage of a product in a particular country or region in research is a cocoa product. This index shows the comparison between the export markets of a country's commodity against the share of the commodity's exports from the world, so that the RCA can be an indicator of the comparative advantage or competitiveness of a country's certain commodity exports to the world.

The concept of RCA measurement is carried out by calculating the export performance of a product from a country measured by calculating the share of the export value of a product to the total exports of a country compared to the share of the product's value in world trade.

$$RCA = \frac{Xij\ /Xit}{Wj/Wt}$$

Explanation:

X_{ij} : export value of commodity i from country j
X_{it} : total export value of country j
W_j : world's export value of commodity i
W_t : total value of world export

If a country's RCA value for a particular commodity is greater than one (> 1), then the country concerned has a comparative advantage over the average of other countries for that commodity. Conversely, if it is less than one (<1), it means that the comparative advantage for that commodity is low, below the average of other countries. The greater the RCA value, the higher the level of comparative advantage (Astuty and Zamroni, 2000). In this study, RCA calculations will be carried out in five countries, namely Ivory Coast, Ghana, Indonesia, Nigeria and Cameroon because these countries are the largest cocoa producing countries in the world.

2.2. Trading Spesialization Index (TSI)

TSI is used to analyze the position or stage of development of a commodity. This TSI can describe whether for a commodity Indonesia's position tends to be an exporter or importer of the agricultural commodity. In general, TSI can be formulated as follows:

$$TSI = \frac{Xit-Mit}{Xit-Mit}$$

Explanation:

X_{it} : export value of Indonesia's cacao beans
M_{it} : export value of Indonesia's cacao beans

Implicitly, this index considers the demand side and the supply side, where exports are identical to domestic supply and imports are domestic demand, or according to the theory of international trade, namely the theory of net of surplus, where exports of a good occur when there is an excess of the goods in the market. domestic. This index value has a range between -1 to +1. If the value is positive above 0 to 1, then the commodity concerned is said to have the country concerned tends to be an exporter of the commodity (domestic supply is greater than domestic demand). Conversely, if the country tends to be an importer (domestic supply is smaller than domestic demand), if the value is negative, it is below 0 to -1. If the index increases, the competitiveness will also increase, and vice versa (Ministry of Trade, 2014).

3. Result

Cocoa is an industrial plantation crop, a tree known in Indonesia since 1560 and has only become an important commodity since 1951. The Indonesian government began to pay attention and support the cocoa industry in 1975, after PT Perkebunan VI succeeded in increasing cocoa production per hectare through the use of seeds. superior to Upper Amazon Interclonal Hybrid, which is the result of a cross between clones and sabahs. This successful annual tropical plant from South America. The Mayans and Aztecs in the United States are believed to be pioneering users of cocoa in food and beverage. Until the middle of the XVI century, apart from nations in South America, only the Spaniards recognized the cocoa plant (Ragimun, 2012).

Cocoa is also one of the plantation commodities whose role is quite important for the national economy, in addition to providing employment and a source of foreign exchange, cocoa is also expected to be a commodity that can provide a sustainable source of income for farmers. This is possible considering cocoa can be harvested throughout the year although the volume varies between months.

Table 1. Development of Indonesian Cocoa area in 2009-2018

Year	Area (Ha)	Growth (%)
2009	1.587.136	11,36
2010	1.650.621	4,00
2011	1.732.641	4,97
2012	1.774.463	2,41
2013	1.740.612	-1,91
2014	1.727.437	-0,76
2015	1.709.284	-1,05
2016	1.720.773	0,67
2017	1.658.421	-3,62
2018	1.678.269	1,20
Average	1.697.965	1,72

Source: Direktorat Jenderal Perkebunan, processed Pusdatin, 2019.

Table 2. Development of Indonesian cocoa production in 2009-2018

Year	Production(Ton)	Growth (%)
2009	809.583	0,75
2010	837.918	3,50
2011	712.231	-15,00
2012	740.513	3,97
2013	720.862	-2,65
2014	728.414	1,05
2015	593.331	-18,54
2016	658.399	10,97
2017	590.683	-10,28
2018	593.832	0,53
Average	698.576	-2,57

Source: Direktorat Jenderal Perkebunan, processed Pusdatin, 2019.

The development of Indonesia's cocoa area during the 2009-2018 period tended to be flat at 1.72% per year. In 2009, the area of Indonesian cocoa reached 1,587,136 ha, then in 2018 it increased to 1,678,269

ha or an increase of 91,133 ha. The lowest growth occurred in 2017, which decreased by 3.62% compared to 2016. In contrast, the highest growth in area was recorded in 2011 which reached 4.97% compared to the previous year.

Similar to the development of acreage, the development of Indonesian cocoa production in the 2009-2018 period also fluctuated and tended to decline with an average growth of 2.60%. In 2009, Indonesia's cocoa production was 809,583 tons, then in 2018 it was 698,576 tons or decreased by 111,007 tons. The highest production during the 2009-2018 period occurred in 2010, amounting to 837,918 tons, while the lowest production was recorded in 2017 with a production result of 590,683.

Table 3. The average growth and contribution of Indonesia cocoa production according to the status of concession in 2010-2019

Year	Production			
	PR	**PBN**	**PBS**	**Indonesia**
		Growth (%)		
2010-2019	-2,19	-6,44	-3,85	-2,60
		Contribution (%)		
2010-2019	93,79	2,77	2,44	100,00

Source: Direktorat Jenderal Perkebunan, processed Pusdatin, 2019.
Explanation: PR = Perkebunan Rakyat, PBN = Perkebunan Besar Negara, PBS = Perkebunan Besar Swasta

The Ministry of Agriculture, through the Directorate General of Plantation, is spurring an increase in the production of plantation commodities in order to return the glory of high-value commodities in the world market and the welfare of farmers by launching the Bun500 Program. This program provides superior quality plantation commodity seeds. Seeds consist of superior commodities such as coffee, cocoa, rubber and coconut. The Bun500 target provides as many as 500 million seeds in the 2019-2024 period. Availability of superior quality seeds for superior plantation commodities is the main determining factor for increasing production that is competitive in the export market. The Bun500 program consists of six steps:

1. Arrangement of plantation seed systems
2. Introduction and dissemination of new high yielding varieties
3. Cultivation of seed business through seed-independent villages
4. Standardization of certification bodies
5. Arrangement of seed producers
6. Development of a seed database

In terms of productivity, for cocoa commodities in Indonesia during the period 2009-2018 fluctuated with an average downward trend of 1.52% per year. The decline in the average productivity growth occurred in PR of 1.59% per year and PBS of 0.71% per year. Only PBN productivity growth was positive, namely an increase of 1.55% per year on average. In 2009, Indonesia's cocoa productivity reached 822 kg /ha then decreased in 2018 to 756 kg/ha.

Based on data from the average Indonesian cocoa production, there are eight cocoa production center provinces in Indonesia which contribute up to 82.19%. The provinces are Central Sulawesi, South Sulawesi, Southeast Sulawesi, West Sumatra, West Sulawesi, Lampung, Aceh and East Java. Central Sulawesi Province is a province that provides the highest contribution, namely 19.01%. The second and third place is South Sulawesi Province (17.22%) and Southeast Sulawesi Province (16.28%). Other provinces contributed less than 10% with a total contribution of 30.40%.

Table 4. Development of Indonesian cacao productivity in 2009-2018

Year	Produktivity (Kg/Ha)							
	PR	Growth (%)	PBN	Growth (%)	PBS	Growth.(%)	Indonesia	Growth(%)
2009	811	-8,90	941	12,77	994	10,01	822	-7,48
2010	793	-2,28	958	1,85	962	-3,29	804	-2,27
2011	808	1,97	944	-1,48	977	1,58	821	2,12
2012	845	4,56	907	-3,97	930	-4,76	850	3,59
2013	809	-4,31	1.017	12,15	980	5,32	821	-3,44
2014	802	-0,84	817	-19,67	819	-16,43	803	-2,19
2015	796	-0,73	813	-0,49	814	-0,61	775	-3,49
2016	798	0,23	821	0,98	827	1,60	798	2,97
2017	730	-8,52	937	14,13	843	1,93	737	-7,64
2018	751	2,88	930	-0,75	822	-2,49	756	2,58
Average	**794**	**-1,59**	**908**	**1,55**	**896**	**-0,71**	**798**	**-1,52**

Source: Direktorat Jenderal Perkebunan, processed Pusdatin, 2019.

In 2017, cocoa production in Central Sulawesi Province was supplied mostly from Parigi Moutong Regency as much as 29,847 tons or 29.67%. Two other districts that contributed to cocoa production in Central Sulawesi were Poso Regency with 19.55% (19,665 tons) and Donggala Regency with a contribution reaching 12.90% (12,979 tons). The remaining 37.87% is contributed by other districts.

South Sulawesi is the second largest cocoa producing center in Indonesia. Cocoa production in South Sulawesi Province is spread across seven districts with contributions, namely North Luwu (19.40%), Luwu (18.26), East Luwu 9.97%). Bone (9.03%), Pinrang (8.29%), Wajo (8.10%) and Soppeng (7.24%) with total production reaching 80,616 tonnes or 80.30%. The remaining 19.70% was contributed by other districts.

The third highest cocoa production center in Indonesia in 2017 is occupied by Southeast Sulawesi Province with 92,843 tons. The districts with the most cocoa production in Southeast Selawesi Province are in North Kolaka (36,814 tonnes), East Kolaka (22,726 tonnes), Konawe (7,216 tonnes), Kolaka (6,964 tonnes), and Konawe Selatan with a production of 6,626 tonnes. The remaining 13.45% contribution came from other districts.

Cocoa is a commodity that is widely processed and consumed by people of all ages and social status in Indonesia because of its delicious taste and many benefits in terms of health and beauty. Consumption of Indonesian cocoa is divided into consumption of instant chocolate and cocoa powder. During the 2008-2017 period, the development of Indonesian cocoa consumption fluctuated but with an encouraging trend due to its positive value. A very significant increase in chocolate consumption occurred in 2012, where the consumption of cocoa powder reached 83.60 grams / capita.

Fermented cocoa beans are made into a powder which is known as cocoa powder. This chocolate is used as an ingredient in making various food and beverage products. Cocoa pods without beans can be fermented to be used as animal feed. Cocoa beans can be produced into four types of semi-finished cocoa products such as cocoa liquor, cocoa butter, cocoa cake, cocoa powder and chocolate. The chocolate market is the largest consumer of cocoa beans and intermediate products such as cocoa powder and cocoa butter. Cocoa powder is generally used as a flavor enhancer in biscuits, ice cream, milk drinks and cakes. Some of them are also used as a coating for frozen candy or sweets. Cocoa powder is also consumed by the beverage industry such as chocolate milk. Apart from making chocolate and candy, cocoa butter can also be used for the manufacture of cigarettes, soaps and cosmetics.

Table 5. Development of producer-level cocoa prices in the domestic market 2009-2018

Year	Producer Prices (Rp/Kg)	Growth (%)
2009	16.503	16,82
2010	18.557	12,44
2011	19.259	3,79
2012	18.297	-4,99
2013	19.067	4,21
2014	23.336	22,39
2015	23.335	0,00
2016	24.871	6,58
2017	21.475	-7,97
2018	21.459	-0,07

Source: Pusdatin, 2019.

The development of the average price of Indonesian cocoa (in the form of dry beans) in the 2009-2018 period at the producer or farmer level tended to increase. In 2009, the price of cocoa was Rp. 16,503 / kg then in 2018 increased to Rp. 21,459 / kg or an increase of 5.32% per year. The highest cocoa price in that period occurred three years ago, which broke the price of Rp. 24,871 / kg.

Table 6. Development of Indonesian cocoa export and import

Year	Export		Import		Neraca (1.000US$)
	Volume (Ton)	Value (1.000US$)	Volume (Ton)	Value (1.000US$)	
2009	559.799	1.459.297	46.929	121.390	1.337.907
2010	552.892	1.643.773	47.455	164.609	1.479.164
2011	410.257	1.345.430	43.685	175.549	1.169.880
2012	387.803	1.053.615	48.220	177.022	876.593
2013	414.087	1.151.481	63.191	204.730	946.751
2014	333.679	1.244.530	139.671	468.379	776.151
2015	355.321	1.307.771	84.438	293.780	1.013.991
2016	330.029	1.239.621	105.152	350.372	889.249
2017	354.752	1.120.252	270.172	646.335	473.917
2018	380.747	1.245.520	289.002	706.787	538.733

Source: Pusdatin, 2019.

The development of the export volume and volume of imports of Indonesian cocoa in the 2009-2018 period fluctuated. The export volume of Indonesian cocoa in the last 10 years has a trend of decreasing every year with an average of 2.24% per year. The highest volume of cocoa exports occurred in 2009, namely 559,799 tons and the lowest volume occurred in 2016 as many as 330,029 tons.

The volume of Indonesian cocoa imports is nomilaally lower than its export volume, but has a significant upward trend reaching 29.18% annually. The highest volume of cocoa imports in 2018 reached 289,002 tons, while the largest increase occurred in 2017, amounting to 159.93% to 270,172 tons from 105,152 tons previously.

In line with the development of export and import volumes, the export value and import value of cocoa also fluctuate, but tends to increase and is positive for both. In 2009-2018, the average growth of cocoa export value increased slightly by 0.66% per year. The highest cocoa export value was achieved in 2010 amounting to US $ 1.64 billion. Meanwhile, the growth in the value of cocoa imports in the same

period was much higher, reaching 26.52% per year, with the highest cocoa import value occurring in 2018 amounting to US $ 706.79.

Indonesia's cocoa trade balance shows a surpus from 2009 to 2019 but has a downward trend from year to year by 6.68% per year. The highest cocoa trade balance occurred in 2010 amounting to US $ 1.48 billion. On the other hand, the lowest cocoa trade balance occurred in 2017 with a value of US $ 473.92 million.

The main destination country for Indonesian cocoa exports is Malaysia with an export volume of 99,277 tonnes (28.29%) during 2014-2018. The next destination countries for Indonesian cocoa exports are spread to the Americas, Europe and Asia, namely the United States (15.81%), Germany (6.09%) and China (5.41%). Other export destinations with a market share of less than 5% are the Netherlands, the Philippines <Australia, Brazil, Thailand, Spain and Estonia.

Apart from carrying out cocoa export activities, Indonesia also conducts cocoa import trade transactions with various countries in the form of dry and processed beans. The largest importing country for cocoa to Indonesia is Malaysia with an average volume of 42,632 tonnes (24%) during 2014-2018. Other importing countries are Ivory Coast (21.53%), Ecuador (14.39%), Cameroon (8.26%), Nigeria (6.09%), Singapore (5.07%) and Papua New Guinea (3.56%).

1. Analysis of Competitiveness (RCA) of Indonesia Cocoa Beans

Indonesia's cocoa export performance in the international market can be seen from its comparative advantage. This study analyzed the comparative competitiveness of Indonesian cocoa beans and cocoa producing countries in the international market using the RCA (Revealed Comparative Anvantage) method. RCA measures the export market share of a country in the same industrial group as other exporting countries, so it is widely used for comparative advantage. This analysis will compare the RCA value of Indonesian cocoa beans with other major producing countries in the world market, namely Ivory Coast, Ghana, Nigeria and Cameroon. The higher the RCA value, the country has a higher comparative advantage, and vice versa.

Table 7. The RCA value of the cocoa beans producing country.

Year	Ivory Coast	Ghana	Indonesia	Nigeria	Cameroon
2009	370,14	314,14	**13,66**	36,65	458,90
2010	438,41	292,88	**13,65**	21,90	284,94
2011	509,69	213,06	**5,64**	14,24	445,30
2012	373,97	218,11	**3,54**	37,01	161,35
2013	415,98	232,97	**5,21**	36,35	214,02
2014	467,09	251,24	**2,17**	11,82	211,90
2015	446,31	313,14	**1,21**	9,65	298,71
2016	505,62	315,21	**1,03**	12,50	559,68
2017	579,83	235,40	**0,65**	8,85	254,15
2018	610,72	316,30	**0,89**	10,74	973,84
Average	**471,78**	**270,25**	**4,76**	**78,70**	**386,28**

Source: data processed.

The estimation results of the competitiveness of Indonesian cocoa beans during the last 10 years, namely the 2009-2012 period, show that Indonesian cocoa beans have a comparative advantage or competitiveness in the international market as indicated by the RCA value greater than one with an average RCA value of 4.76. However, it can be seen that in 2017 and 2018 the RCA value of Indonesian

cocoa beans was smaller than one, meaning that Indonesian cocoa beans in 2017 and 2018 did not have a comparative advantage or were not competitive with RCA values of 0.65 and 0.89.

Ivory Coast is the largest cocoa producer in the world and also has a very high RCA value, not only above the value of 1, but worth hundreds. This shows that the competitiveness of Ivory Coast cocoa beans is far above the world average. The highest RCA value occurred in 2018 at 610.72 and the lowest RCA value occurred in 2009 at 370.14.

Ghana is one of the largest producers of cocoa in the world. It can be seen in table that the RCA value of Ghana for cocoa beans tends to decrease from year to year. The highest RCA value occurred in 2018 at 316.30 and the lowest RCA value occurred in 2011 at 213.06. Even though it tends to decline, the RCA value of Ghana's cocoa beans is still above the world average.

Nigeria is the largest cocoa producer country in the world after Indonesia, however the average RCA value of Nigeria is greater than the value of Indonesia's RCA. The highest RCA value occurred in 2012 at 37.01 and the lowest RCA value occurred in 2017 at 8.85.

Cameroon is the fifth largest cocoa producing country in the world after Ivory Coast, Ghana, Indonesia and Nigeria. Despite being in fifth position for cocoa producers, Cameroon's RCA scores can beat those of Ghana, Indonesia and Nigeria. This shows that the competitiveness of cocoa beans in Cameroon is also quite high, it can be seen from the RCA value which is above one, even reaching hundreds, such as in Ivory Coast and Ghana.

Porter (1990) states that competitiveness can be identified with productivity, namely the level of output produced for each input used. This increase in productivity can be caused by an increase in the amount of physical input for capital and labor, an increase in the quality of the inputs used, and an increase in technology (total factor productivity).

Table 8. Productivity of Indonesian cocoa and competing countries in 209-2017 (Ton/Ha)

Year	Indonesia	Ivory Coast	Ghana	Nigeria	Cameroon
2009	0,51	0,56	0,44	0,27	0,39
2010	0,51	0,61	0,39	0,31	0,39
2011	0,41	0,62	0,44	0,32	0,36
2012	0,54	0,66	0,55	0,32	0,38
2013	0,41	0,53	0,52	0,30	0,41
2014	0,42	0,52	0,51	0,29	0,40
2015	0,35	0,51	0,51	0,29	0,40
2016	0,39	0,50	0,51	0,28	0,40
2017	0,38	0,49	0,52	0,28	0,40
Average	0,43	0,55	0,48	0,29	0,39

Source: FAO, processed Pusdatin, 2019.

The productivity level of Indonesian cocoa can be said to be quite varied, namely between 0.54 tonnes / ha and the lowest, namely 0.35 tonnes / ha. The lowest productivity value for Indonesia occurred in 2015, when at that time a fairly high level of cocoa productivity occurred in the Ivory Coast and Ghana, both at 0.51 tonnes / ha.

Based on its average productivity, Ivory Coast is back in first place with a productivity of 0.55 tonnes / ha and the lowest cocoa productivity occurs in Nigeria with a productivity of 0.29 tonnes / ha. Indonesia is among the four countries with an average productivity of 0.43 tonnes / ha.

Table 9. The world's largest cocoa exporter in 2013-2017

No	Country	Export Volume (ton)					Average (Ton)
		2013	2014	2015	2016	2017	
1	Ivory Coast	813.891	1.117.000	1.285.988	1.055.636	1.510.082	1.156.519
2	Ghana	526.187	747.612	572.624	581.375	573.334	600.226
3	Ekuador	178.273	198.890	236.072	227.214	284.546	224.999
4	Cameroon	179.933	192.637	237.380	263.746	221.667	219.073
5	Netherlands	215.717	201.796	188.123	147.211	231.320	196.828
6	Nigeria	182.900	189.985	76.197	227.495	287.632	192.842
7	Belgium	115.048	135.733	160.960	187.202	237.207	167.230
8	Malaysia	42.926	93.557	71.291	91.090	145.294	88.832
9	**Indonesia**	**188.420**	**63.334**	**39.622**	**28.329**	**23.594**	**68.660**
	Others	281.674	346.962	376.413	419.995	380.667	316.142
	World	2.724.969	3.287.479	3.244.670	3.229.293	3.895.343	3.276.351

Source: FAO, processed Pusdatin, 2019.

Indonesia ranks the ninth largest cocoa exporter country in the world, even though based on the amount of production Indonesia is the third largest cocoa producer in the world. In table it can be seen that the volume of Indonesia's exports has decreased from year to year. This is in line with Indonesia's RCA value which tends to decline even in 2017 and 2018 the RCA value is below one, meaning that in that year Indonesian cocoa beans are not competitive or do not have a comparative advantage.

The very high value of the Ivory Coast and Ghana RCA is due to the existence of international policies that make it easier for them to export cocoa beans to other countries, such as the exemption of import duty for cocoa beans for Africa which is imposed by the European Union, while Indonesia itself subject to an import duty of 20%. Therefore, Ivory Coast and Ghana have stronger competitiveness compared to Indonesia.

According to Law Number 17 of 2006 Amendment to Law Number 10 of 1995 concerning Customs, it is clear that export duties are levies imposed by the state on exported goods based on applicable laws and regulations. Meanwhile, exports can be defined as the flow of goods and services from domestic production activities to be sold abroad (Mankiw, 2007).

The imposition of export duties aims to maintain the supply of raw materials in the country which in turn will have an impact on the growth of downstream industries in the cocoa processing sector (Syadullah, 2012). According to Harsanti et al (2017), the implementation of export duty policies can reduce the rate of export of cocoa beans. This is because the export duty will become an additional cost burden resulting in higher selling prices and automatically importing countries will seek other countries producing cocoa beans as suppliers for their industry.

The low competitiveness of Indonesian cocoa beans is also caused by the low quality of cocoa beans. This is because Indonesian cocoa beans are not fermented first, so the price is subject to automatic detention or a price discount. The impact of automatic detention is that the price of cocoa beans is lower than cocoa from other countries, especially in the United States, which is the second largest export destination for cocoa beans after Malaysia. The only country that imposes discounted prices on Indonesian cocoa exports because the quality of cocoa that is considered low is the United States. The discount is 10% - 15% from market price.

In the European market, Indonesia's cocoa exports are relatively small because the region still prioritizes cocoa imports from its former African colonies, one of which is Ivory Coast and Ghana, European countries prioritize cocoa beans from these countries because of their high quality processed from fermented cocoa beans, while the American market tends to mix fermented and non-fermented cocoa

beans (Kemenperin, 2010). Even so, Indonesian cocoa beans have the advantage of high melting point cocoa butter, and do not contain pesticides compared to cocoa beans from Ghana and Ivory Coast (Ministry of Industry, 2010).

According to Beckett (1999), the character of cocoa that is well known to the world market is from cocoa producing countries, namely Ivory Coast because it has perfectly fermented cocoa but the yield of nib and cocoa butter is still lower than Ghana cocoa. Fermentation of cocoa beans in the country of Ghana is usually carried out by stacking or stockpiling and the drying process also minimizes smoke contamination. Meanwhile in Indonesia, the cocoa beans are known for their high acidity and low cocoa aroma. Cocoa beans from Sulawesi are even known to have a medium cocoa aroma, high shell content, and are dry.

The quality of Indonesian cocoa beans is far below that of African countries such as Ivory Coast and Ghana. The taste of Indonesian cocoa beans is inferior to other countries because Indonesian cocoa farmers do not ferment their cocoa beans. On the other hand, these African countries promote the fermentation of cocoa beans, so that the aroma and taste are more pronounced.

2. Trading Specialization Index (TSI) of Indonesian Cocoa Beans

The trade position of Indonesian cocoa beans is measured using the Trade Specialization Index (TSI) so that the development stage or growth rate of cocoa beans in trade can be seen. According to Ridwan (2017), the TSI will identify the growth rate of a product in trade into 5 stages, namely:

1. Introduction stage, TSI value between -1 to -0.50
2. Import substitution stage, the TSI value is between -0.50 to 0.00
3. Growth stage, the TSI value is between 0.01 to 0.80
4. Maturity stage, TSI value 0.81 to 1.00
5. In the re-import stage, the TSI value decreased from 1.00 to 0.00

Table 10. Trade Specialization Index value for Indonesian cocoa beans

Year	TSI
2009	0,87
2010	0,86
2011	0,81
2012	0,72
2013	0,70
2014	-0,27
2015	-0,19
2016	-0,37
2017	-0,80
2018	-0,76
Average	**0,16**

Source: data processed.

The TSI value for the trade in Indonesian cocoa beans in 2009-2018 has decreased so that the trade is back in the growth stage with a value of 0.16, which previously in 2009 to 2011 the Indonesian cocoa bean trade increased to reach maturity stage because it was valued at more than 0.81. This drastic decline occurred in 2014 to 2018, where the trade in Indonesian cocoa beans was negative, meaning that in that year Indonesia tends to be an importer of cocoa beans. Based on the development of Indonesian cocoa imports in 2009-2018, the largest increase in import volume occurred in 2014, amounting to 139,671 tons, previously Indonesia only imported 63,191 tons in 2013, so this has resulted in a decrease in the value of TSIs or negative value in 2014 to 2018 This negative value brought Indonesia back to the import substitution stage in 2014 to 2016, then decreased to the introduction stage in 2017 and 2018. Indonesia's

trend as an importer of cocoa beans in 2014-2018 is evidenced by the development of acreage and development of production. Indonesian cocoa beans were decreasing in that period. Given the decline in domestic production, industry players are more likely to import cocoa beans, so this also proves that currently Indonesia tends to be a cacao bean importer country.

According to the Ministry of Trade (2014), if the trade specialization index has increased from year to year, then its competitiveness will also increase, and vice versa. Based on the data, the fluctuating value of the TSI for Indonesian cocoa beans but tends to decline and this negative value indicates the low competitiveness of Indonesian cocoa beans.

In addition, there are also obstacles in international trade, such as the policy of determining the import duty for Indonesian cocoa, namely through the Regulation of the Minister of Finance (PMK) No. 67 / PMK.011 / 2020 concerning the determination of export goods subject to export duties and export duty rates, so that even though Indonesian cocoa production increases, due to obstacles in the export process, competitiveness does not increase.

On the other hand, prior to the existence of the cocoa bean policy in the era before the export duty policy was more likely to be exported in the form of beans. If this condition is allowed by the government, it will threaten the sustainability of the domestic cocoa processing industry. Besides that, by only exporting it in the form of seeds, there will be no added value to the product. The added value of this product has a positive impact on the country because one of them can increase foreign exchange for the country and can cause a multiplier effect or multiple effects on the economy (Hermawan, 2019).

Therefore, this decline in cocoa bean exports is a first step to maintain existing production of cocoa beans in the country and to increase cocoa beans so that they have added value so that in the future Indonesia will not only export cocoa beans in raw form but in semi-finished forms. or preparations that have high added value.

Like neighboring countries, namely Malaysia, which imports cocoa beans from Indonesia which are then processed in the country, so that Malaysia can export cocoa in processed form which has high added value, including Indonesia as an importing country of cocoa from Malaysia in processed form, even though The cocoa beans come from Indonesia.

With domestic processing or industrial touches, the value of this cocoa will be much higher than that of being exported directly in the form of cocoa beans. Industrial touch will provide added value to commodities, so that the export price will be higher. In addition, it also has a positive impact on domestic industry, increases people's income and can expand employment opportunities. Improving the quality of cocoa beans also needs to be done by carrying out the fermentation process so that Indonesian cocoa beans can also remain competitive in the international market.

4. Conclussion and Suggestion

4.1. Conclussion

The conclusions obtained from this research are: the development of Indonesian cocoa fluctuates but tends to decline, it can be seen from the development of acreage, production, productivity, prices and exports. However, the development of Indonesian cocoa imports tends to increase.

The competitiveness of Indonesian cocoa beans in the international market for the 2009-2018 period has a competitive advantage or comparative advantage with an average RCA value greater than 1, namely 4.76. However, in 2017 and 2018, the RCA values were less than 1, namely 0.65 and 0.89. Therefore, there was a decline in 2017 and 2018, so that Indonesian cocoa beans are not competitive or have no comparative advantage.

The TSI value of Indonesian cocoa beans for the 2009-2018 period is positive at 0.16 or is in the growth stage. However, from 2014 to 2018, Indonesia's cocoa beans had a negative value, so that

Indonesia tends to be a cacao bean importer country and has changed its position to become the import substitution stage and the introduction stage.

4.2. Suggestion

The suggestion that the writer can give is that there is a need for further research to carry out the Acceleration Ratio (AR) analysis so that it can be seen whether the Indonesian state has a strong enough position to be able to seize the international market.

References

[1] Alam, Anshary. 2009. Penggerek Buah Kakao, *Conopomorpha cramerella* Snellen (Teknik Pengendaliannya Yang Ramah Lingkungan). *Jurnal Agroland*, 16(4): 258-264.
[2] Astuty dan Zamroni. 2000. *Kajian Daya Saing Ekspor Komoditas Pertanian*. PEP-LIPI, Jakarta.
[3] Badan Pusat Statistik. 2018. *Ekspor Hasil Perkebunan Indonesia Tahun 2015-2018*. BPS, Jakarta.
[4] Beckett, S.T. 1994. *Industrial Chocolate Manufacture and Use* 2nd *edition*. Blackie Academic and Professional, an imprint of Chapman & Hall. India.
[5] Dewan Kakao Indonesia. 2019. *Peningkatan Produktivitas, Perbaikan Kualitas dan Keberlanjutan Kakao Indonesia*. Ditjenbun, Jakarta.
[6] Gandolfo, Giancarlo. 2004. *Elements of International Economics*. Springer Science and Business Media, Italy.
[7] Hatmi, R. U. & Rustijarno, S. 2012. *Teknologi Pengolahan Biji Kakao Menuju SNI Biji Kakao 01-2323-2008*. BPTP, Yogyakarta.
[8] Hermawan, R. 2019. Analisis Pengaruh Kebijakan Bea Keluar Biji Kakao, Impor Biji Kakao, Ekspor Biji Kakao dan Harga Cocoa Butter terhadap Ekspor Cocoa Butter. *Indonesia Treasury Review: Jurnal Perbendaharaan, Keuangan Negara, dan Kebijakan Publik*, 4(3): 233-242.
[9] Jhingan, M.L. 2000. *Ekonomi Pembangunan dan Perencanaan*. PT Raja Grafindo Persada, Jakarta.
[10] Kementerian Perdagangan. 2019. *Dorong Ekspor Cokelat melalui Penguatan Kakao Berkelanjutan serta Kemitraan Industri, Eksportir dan Petani Kakao*. Siaran Press, Jakarta.
[11] Kementerian Pertanian. 2019. *Outlook Komoditas Perkebunan Kakao*. Pusat Data dan Sistem Informasi Pertanian Sekretariat Jenderal, Jakarta.
[12] Kuncoro, Engkus dan Riduwan. 2008. *Cara Menggunakan dan Memakai Analisis Jalur*. Alfabeta, Bandung.
[13] Mankiw, N. Gregory. 2003. *Pengantar Ekonomi Edisi 2*. Erlangga, Jakarta.
[14] Mankiw, N.Gregory. 2007. *Makroekonomi Edisi Keenam*. Erlangga, Jakarta.
[15] Melia, Ariyanti. 2017. *Karakteristik Mutu Biji Kakao (Theobroma cacao L.) Dengan Perlakuan Waktu Fermentasi Berdasar SNI 2323-2008*. Balai Besar Industri Hasil Perkebunan, Makassar.
[16] Pusat Penelitian Kopi dan Kakao Indonesia. 2010. *Budi Daya Kakao*. Agro Media Pustaka, Jakarta.
[17] Ragimun. 2012. *Analisis Daya Saing Komoditas Kakao Indonesia*. Pusat Kebijakan Ekonomimakro Badan Kebijakan Fiskal, Kemenkeu, Jakarta.
[18] Ridwan, Umar. 2017. Daya Saing Komoditas Kakao Indonesia di Perdagangan Internasional. *Forum Agribisnis: Agribusiness Forum*, 7(1): 1-20.
[19] Teddy, Suparno. 2000. Infestasi Penggerek Buah Kakao Kedalam Perkebunan Kakao di kawasan Kerkap, Bengkulu Utara dan Pengendaliannya. *Jurnal Hama dan Penyakit Tumbuhan Tropika*, 1(1): 11-15.
[20] Wibowo dan Kusrianto. 2010. *Menembus Pasar Ekspor: Panduan Menjadi Entrepreneur Kaliber Internasional*. Gramedia, Jakarta.
[21] Yurike. 2019. Analisis Komparasi Daya Saing Ekspor Lada Indonesia Terhadap Vietnam dan Malaysia di Pasar ASEAN. *Jurnal Ilmiah Sosio-Ekonomika Bisnis*, 22(1): 80-90.