

V. FINDINGS AND DISCUSSION

A. Findings

The performance of major agricultural commodities in the last decade has been quite good in some commodities. The Indonesian agricultural export commodities, however, remains facing various challenges, most of them are very structural in nature, such as low-yielding smallholder crop systems, sustainability pressures, low-quality of production, underinvestment, inadequate infrastructure, underdeveloped agricultural practices and restrictive government policies. Indonesian Agricultural Export Commodities to ASEAN shown in Table 8.

Table 1. Indonesian Agricultural Export Commodities to ASEAN 2007-2016 (in million US)

No	Products and input	Years									
		2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
1	Rice	0.5	0.86	1.81	0.45	0.84	1.19	1.2	0.8	1	1
2	Fresh Banana	0.9	0.99	0.2	0,05	1.01	0.87	3	16.2	13	11
3	Pineapple	71.3	204.4	138.8	114.8	169.4	176	134	165	192	152
4	Mangoes, Etc	6.8	7.86	8.03	10.08	12.38	19.9	7.7	8.6	20	23
5	Palm oil	7869	12375	10367	13469	17261	17602	15838	17464	15385	14367
6	Coconut Oil	570	769.1	387.3	566.1	937.8	947	572	943	812	816
7	Cake of Coconuts	36.4	34.41	24.77	25.49	33.66	61.4	46.7	61	46	39
8	Soybeans	2.3	1.41	0,34	0.34	0.44	1.59	0.5	24.4	1	0
9	Sugar and Honey	93.9	150.9	166.0	176.2	194.7	206	235	284	219	225
10	Coffee	636	990.8	823.9	814.3	1036	1249	1173	1039	1198	1008
11	Tobacco	424.7	508.8	595	672.6	710	793	914	999	958	947
12	Crude Rubber	4870	6058	3243	7329	11766	7864	6910	4744	3701	3373

Source: (ASEAN, 2016a)

Regarding trade activity in Table 8. the export of Indonesia's commodities in agriculture has big amount in oil palm tree, rubber, and coffee. In the findings, there are 12 commodities that has different result on Revealed Comparative Advantage value.

1. Revealed Comparative Advantage of Rice (HS.10.06)

Rice is staple food for more than 80% of the people and also major source of income for majority of the grass-root farmers; therefore, paddy is the most important food crop grown in Indonesia. With diversification programs, however, other commodities are included in the farming systems and supplement to the income from rice. Java Island is the main area for growing rice which comprises 41% of paddy-field areas and contributes near to 60% of total harvested areas in the country. Other major areas of paddy fields are Bali, Lombok, west and southern part of Sumatra, and South Sulawesi. The Revealed Comparative Advantage (RCA) value of rice, including husked and broken rice (HS. 10.06) are shown in Figure 1.

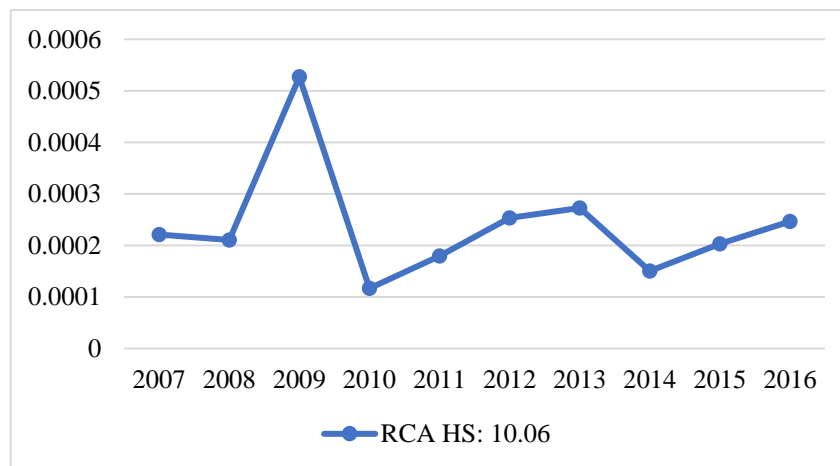


Figure 1. RCA Value of Rice

The Figure 1 showed that the competitiveness of rice, including husked and broken rice in Indonesia is quite low. The average of RCA of this product is 0.000238074 which is in Balassa index called as Revealed Comparative Disadvantage. This is due to the rice production in Indonesia is mostly consumed by domestic

demand. That way, Indonesia is including the largest rice consuming country in southeast Asia. According to data (KEMENPAN, 2012), Indonesians consumed rice up to 107.71 kg per capita per year in 2002 declining to 97.65 kg per capita per year in 2012. The value is almost double that of world rice consumption, which is only 60 kg per capita per year. Meanwhile, in other countries the rice consumption such as in Korea reached up 40 kg per capita per year, Japan 50 kg per year, Malaysia 80 kg per year, and Thailand 70 kg per year.

Rice production is not comparatively advantage for Indonesia, and Indonesia has been one of main importer for rice. There are several reasons that might explain these conditions. In terms of farmers, majority of farmers in Indonesia are small and subsistence. Farmers in this category fall into condition of having low productivity and inefficiency in production. Indonesia also falls in trap of liberalization of rice market, and applying policy of single staple food (Allo, Sukartini, & Widodo, 2017).

Every country in Southeast Asia has an interest in meeting the rice needs of its population with rice production, but not all countries are supported by natural resources and agriculture-climate. This condition makes Southeast Asian countries is known as the largest rice exporter and the second largest importer in the world. Thailand and Vietnam are the main rice exporting countries in the Southeast Asia region, while Indonesia, Malaysia and the Philippines are the main importing countries of rice in the Southeast Asian region (Hermawan, 2013). Hermawan classifies countries in the Southeast Asian peninsula (Myanmar, Cambodia, Laos, Vietnam and Thailand) and island countries (Indonesia, the Philippines, Malaysia, Singapore and Brunei

Darussalam). Rice productivity results of countries in the Southeast Asian peninsula have higher rice production than island countries in Southeast Asia. This is partly due to the support of several large river systems that provide water needs for rainfed rice fields. Whereas, in many island countries, there are not many large river systems and mostly used as irrigation systems.

2. Revealed Comparative Advantage of Fresh Banana (HS. 08.03)

Banana is a horticultural crop that has a high level of production in Indonesia because of the suitability of land, climate, and the support of human resources. Bananas are known as tolerant of various heights, from areas with lowland as well as with high-altitude areas. Budianto said Bananas can provide income with a fairly short time (1-2 years), as well as considerable market demand and its production is available evenly throughout the year (Widhiyoga, Ip, & Si, 2015). The Revealed Comparative Advantage (RCA) value of Fresh Banana (HS. 08.03) are shown in Figure 2.

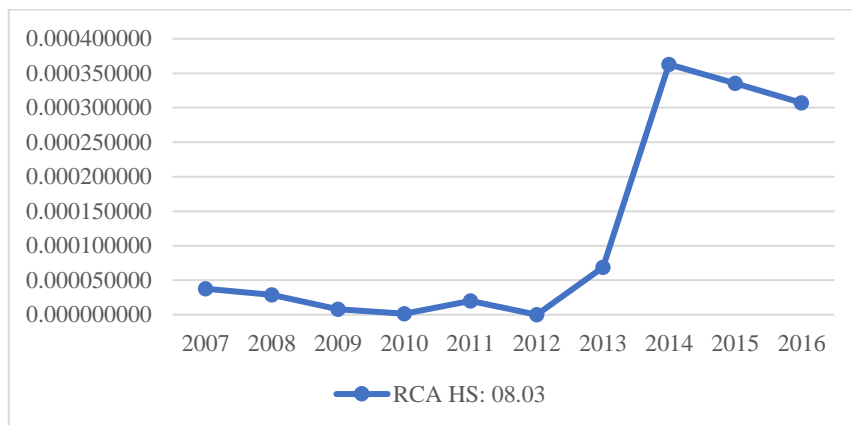


Figure 2 . RCA Value of Fresh Banana

The Figure 2 showed that the competitiveness of Banana fresh of Indonesia is still far away from the good index to get the comparative advantage. The average of RCA of this product is 0.000116978 which is in Balassa index called Revealed Comparative Disadvantage. Banana already showed the increase since 2013 to 2014, but it is going down slowly in 2015 and 2016.

The Philippines is the number one banana producing country in ASEAN. According to the FAO data of 2008-2012, the average production of bananas from the Philippines reached 9.04 million tons with the contribution in ASEAN countries by 47.90%. Some factors that influence the comparative advantages of Indonesian bananas include: (1) natural resources, (2) biological factors, (3) input prices, (4) technology and (5) transportation (KEMENTAN, 2016a).

The area that became a banana production center includes Sumatra, Java, Kalimantan and Papua. There are 33 provinces in Indonesia that use its land to grow banana commodities. There are three provinces that have the largest banana planting area in Indonesia namely East Java, West Java and Lampung. Java Island contributes considerable contribution compared to banana production outside java (Hidayati, 2018). In year 1980 – 2013 banana production in Java reached 61.22% of the total production of Indonesian bananas, while outside Java only at 38.78%. The land area used to grow bananas is wider in Java than with land area outside Java (Hidayati, 2018).

In the year 2011-2015, the growth of banana consumption in Indonesia grew better by 1.32% per year compared to the previous period 2002-2010 which was only 0.04% per year. High banana consumption in 2011 amounted to 2.13 million tons, up 30.87% from 2010 (KEMENTAN, 2016a).

The low Indonesian comparative advantage in the ASEAN market in banana commodities is also due to Indonesia's export destinations outside ASEAN. The development of export volume and the volume of banana imports in Indonesia especially in the period of 2000-2015 tended to fluctuate. The highest volume of Indonesian banana exports was achieved in 2014, which amounted to 26,694 tons and the lowest volume in 2010 which only reached 14 tons.

In terms of growth, 2011 was the most fantastic export growth of bananas to penetrate 12,292.86%, an achievement that has not been recorded until now. On the other hand, the lowest volume of banana export volume occurred in 2010 which fell 98% to 14 tons from 701 tons in the previous year. The volume of the main destination for Indonesian banana exports in fresh form is China with an export volume of 7,847 tons (35.17%) in 2015. The next destination country for Indonesian banana exports is dominated by countries in the Middle East, Saudi Arabia (3,499 tons), Japan (2,968 tons), Malaysia (2,847 tons), United Arab Emirates (2,763 tons), and Kuwait (2,342 tons).

3. Revealed Comparative Advantage of Pineapple Excluding Fresh (HS. 08.04.30)

Pineapple is second important harvest after bananas, contributing to over 20 % of the world production of tropical fruits (García, 2005) published in Food and Agriculture Organization (FAO). Nearly 70% of the pineapple is consumed as fresh fruit in producing countries. Its origin has been traced to Brazil and Paraguay in the Amazon Basin where the fruit was domesticated. Collin in 1949 said, "It has been defined as the most probable area of origin the zone comprised from upper Panama and

Brazil, Paraguay and Argentina, including the northern Amazonian forest and the semi-arid regions of Brazil, Venezuela and Guyana” (García, 2005). The Revealed Comparative Advantage (RCA) value of Pineapple Production Excluding Fresh (08.04.30) are shown in Figure 3.

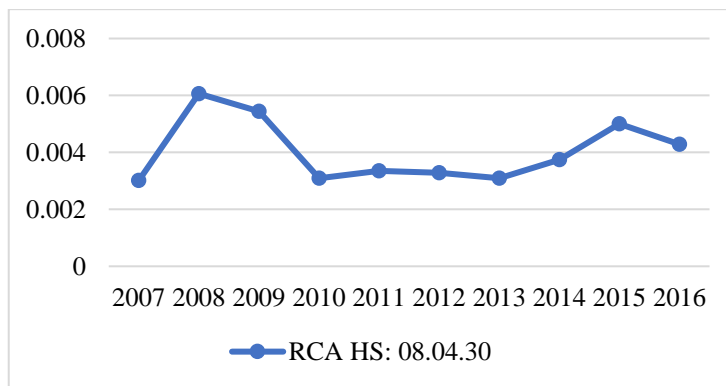


Figure 3 RCA Value of Pineapple Production Excluding Fresh

The Figure 3 showed that the competitiveness of pineapple in ASEAN market still far away from the good index to be a major exporter. The highest RCA point showed in 2008 and then going down slowly and get increased in 2015 and back to down in 2016. The average of RCA of this product is 0.004036737 which is in Balassa index called as Revealed Comparative Disadvantage.

Marketing of overseas pineapple is faced with some problems such as the product cannot as good as the quality standards of the world market, continuity and the amount of supply is not guaranteed (KEMENTAN, 2016b) . During the period of 1980-2012, there are 6 (six) ASEAN countries that export the pineapple, namely the Philippines, Malaysia, Thailand, Indonesia, Vietnam and Singapore. Philippines dominates as the largest exporter country of South East Asia, even the year 2009-2013

fresh export of pineapple from the Philippines accounted for more than 93% of the volume of export of pineapple from ASEAN countries (KEMENTAN, 2016b).

Data from Food and Agriculture Organization explained that Thailand, Philippines, Brazil and China are the main pineapple producers in the world supplying nearly 50 % of the total output (Boansi, Odilonkounagbéloknon, & Appah, 2014). Other important producers include India, Nigeria, Kenya, Indonesia, México and Costa Rica and these countries provide most of the remaining fruit available (50%).

In term of canned pineapple, Indonesia exports canned pineapple worth 300 US dollars per year. One of the industries that produce canned pineapple is PT Great Giant Pineapple (GGP). The company exports canned pineapple to Middle East, Japan, South Korea, Singapore and Malaysia with a total of 4,000 containers each year (Ramli, 2018). Minister of Industry, Airlangga Hartanto said that this industry has the power to boost foreign exchange from exports.

4. Revealed Comparative Advantage of Mangoes, Guava, Mangosteen (HS. 08.05)

In fact, Indonesians consume fewer fruits and vegetables than another country such as Cambodia (Kundhavi Kadiresan, 2017). A review of the current agricultural policies and food production incentives could help strike a balance between farmer protection and consumer support, as well as give the production of highly nutritious foods, including soybean, vegetables, and fruits, the same priority as that of staple foods. The Revealed Comparative Advantage (RCA) value of Mangoes, Guava, and Mangosteen (HS. 08.05) are shown in Figure 4.

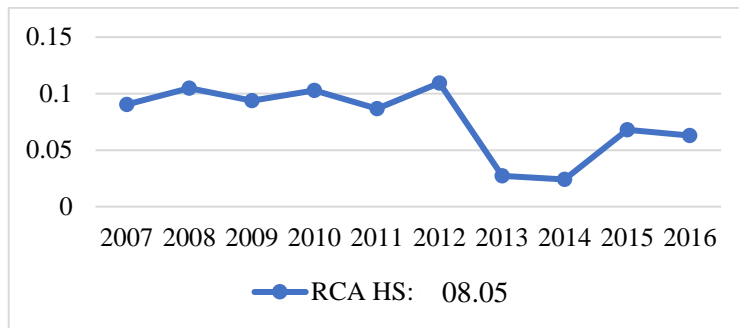


Figure 4 RCA of Mangoes, Guava, and Mangosteen

The Figure 4 showed that the competitiveness of mangoes, guava, and mangosteen in Indonesia is quite low. However, from the bar we found that RCA index is not stabilized. The average of RCA of this product is 0.077013989 which is in Balassa index called Revealed Comparative Disadvantage. The competitiveness of mango industry in Indonesia is quite low, mostly because mango production fluctuates depending on the seasonal patterns of production. Domestic demand for mango has increased significantly as many societal efforts to promote local fruits in recent years.

In July 2011, some community and stakeholders of horticulture, pioneered by the Alumni of Bogor Agriculture University have declared that Friday as the “Day of Local Food” where the fellow citizens are encouraged to consume domestic fruits only. This declaration also endorsed by the government which also encourages government officials to consume local food, including mango, at least every Friday. This movement somehow would increase the demand for local food, which may serve as incentive systems to improve the mango production – and other horticultural products.

The uniqueness of horticultural products include that fresh fruits are more preferred than the processed foods, either extracted, dried, and fermented. Thus, efforts in upstream development, at farm level, are more relevant to improve the

competitiveness of mango, rather than downstream development at manufacturing level. Nevertheless, value-adding activities at post-harvest level are necessary to prevent the decrease in economic value due to perishable nature of horticultural products as well as to anticipate a significant increase in mango production.

Mango is among the horticulture crops that could grow in almost all agroecological zones in the country, even in the regions having sandy soils and a bit dry are the most suitable for mango farming (Arifin, 2013). Mango production has grown fast in the last decade, from 876 thousand ton in 2000 to 2.24 million ton in 2009. The preliminary figure of mango production in 2010 was 1.3 million ton, over 40 percent decline from the previous year. The most reliable explanation regarding the decline is the long raining season in 2010, creating damages for mango flowers before becoming the mango fruits. Mango farms are mostly small-scale and less intensive compared to other cultivation practices of upland tree crops. In Indonesia, mango production is dependent on seasons, instead of technology application.

Since the mid of 1990s, the government has launched many initiatives and programs to increase the production and productivity of horticultural products, such fruits, flower, medicinal plants, etc. Foreign agencies such as Japanese Bank for International Cooperation (JBIC), United States Agency for International Development (USAID), Australian Agency for International Development (AusAID), also contributing to the design and implementation of horticultural development programs. The following are some examples: Fruit Crops Production Center, Farm Operation in Special Area, Integrated Farm Operation in Marginal Area, Integrated Rural Agricultural Project, Integrated Horticulture Development in Upland Area, etc. For

mango, the production increase occurred after 3-4 years from the initial planting, so that the production figures increased significantly after 2002. Harvested area of mango increased from 144 thousand hectares in 2000 to 215 thousand hectares in 2009, particularly in the locations of projects above such as in Java and Nusa Tenggara.

In addition, mango production is also triggered by increasing demand, especially in recent years, after the economy has grown above five percent. Mango and other fruits are not considered as basic staple foods, so that the demand for mango is determined mostly by the growth in income level and purchasing power of the consumers. The demand for mango is also determined by the rapid development of hotel and restaurants, and tourism sector as well as increasing awareness to consume fruits that contain vitamin C and A, especially among middle income class. Mango and other horticultural products also have unique characteristics where fresh fruits are more preferred than the processed foods either extracted dried or fermented.

Efforts to increase production and productivity, at farm level, are more relevant to improve the competitiveness of mango, rather than downstream development at manufacturing level. However, processing and other post-harvest activities for horticultural are necessary to anticipate the perishable nature of mango and to serve the consumer preference, to add-value for the products, and to maintain the nutrition contents.

Indonesia is a very small player in mango export, far behind the roles of Philippines and Thailand in the Southeast Asia region or far behind those of India, Mexico, and Brazil in the world market. The share of Indonesian mango export in the world market is quite small, only about 10 percent, with the exception in 2002 and

2004, including the export of mangosteen and guava. During these years, Indonesia was able to export mango as much as 1.6 million tons and 1.9 million respectively, generating foreign earnings as much as US\$ 2.7 million and US\$ 2 million respectively in 2002 and 2004. In these years, the share of export market is above 20 percent, a very significant jump from the export in 2001 and 2004 respectively. Export destinations of Indonesian mango are mostly among Asian countries such as Singapore, Malaysia, and some to Taiwan, Japan, and South Korea (Arifin, 2013).

The low exports of horticultural products are due to inadequate post-harvest technology. Director of Post-Harvest Handling at the Ministry of Agriculture, Agustin said post-harvest handling must be improved so that competitiveness and value-added products can increase. Ministry of Agriculture said that climate differences also affect post-harvest quality. In the subtropics climate, fruit that has been harvested will not rot like fast-harvested fruit in the tropics (kompas, 2016).

5. Revealed Comparative Advantage of Palm Oil (HS. 15.11)

From 1997–2017, Indonesian palm oil production increased from five to over forty million metric tons (Thom Wright, 2017). More than 85% is exported and palm has been Indonesia's largest agricultural export for the last two decades, accounting for more than 55 per cent of the 65 million metric tons produced globally in 2017. The Revealed Comparative Advantage (RCA) value of Palm Oil (15.11) are shown in Figure 5.

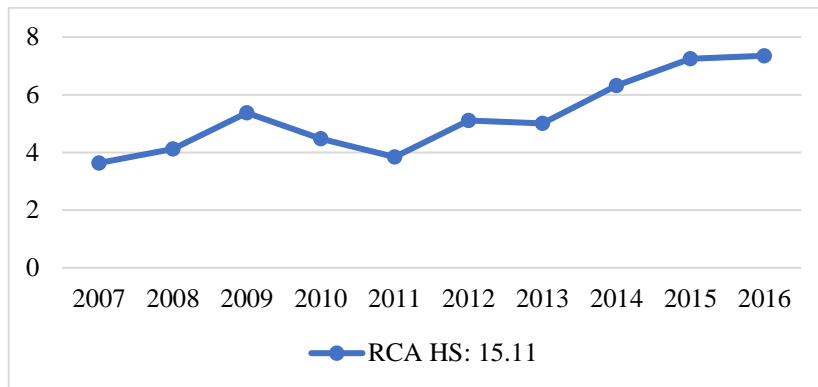


Figure 5. RCA Value of Palm Oil

The figure showed that the competitiveness of Palm Oil in ASEAN market is in the good index to be a major exporter. The average of RCA in this product is 5.250077458 which is in Balassa index called Strong Comparative Advantage. The highest RCA point showed in 2016 with value was more than 7.

The Palm oil was among the leading exporting commodities for the whole period in terms of competitiveness and export share. The export markets for these products are not only in ASEAN (Malaysia, Myanmar, Singapura, Filipina, Vietnam, Thailand), but also in Asian economies (China, Japan, Korea,), and some European countries like Austria, Belgium, Bulgaria, France, Ireland, Italy and the UK. This industry has maintained high competitiveness with its RCA index varying between 3.31 and 7.20.

The bright prospects for palm oil commodities in the world trade in vegetable oils have encouraged the Indonesian government to spur the development of oil palm plantations. The development of the oil palm plantation sub-sector in Indonesia cannot be separated from government policies that provide various incentives to the industry. One of them is the ease of licensing and investment subsidy assistance for the

development of smallholder plantations with the PIR-Bun pattern and in opening new areas for large private plantation areas (DEPPERIN, 2007). Private companies process oil palm from upstream to downstream sectors which are still found rarely in other commodities.

Since 2000, private sector plantation areas were double and state-owned plantation area remained static, while the area managed by small, family farmers tripled (growing three times as fast as industrial estates). Not all land is equally suitable for oil palm cultivation. Humid low-lying tropical areas with ample rainfall provide the ideal growing conditions. Reasonably navigable terrain allows for easier planting, harvesting, and transporting. The combination of rising external demand, decentralized governance, and geographic differences in growing conditions have led to large differences in cultivation intensity across regions.

In response toward climate several regulation/guidelines have been established, including the Minister of Agriculture Regulation No. 47/2006 on Guidelines for Agriculture Cultivation in Highlands; Minister for Agriculture Regulation No.26/2007 on Guidelines of Plantation License; and Minister of Agriculture Regulation No.14/2009 on Guidelines of Peat Land Utilization for Oil Palm Plantation. The latest regulation tightens the requirement of peat land utilization for oil palm plantation, which is not only consider the depth of peat bog (<3m) but also the main composition of soil under the peat, the maturity of peat, and the fertility of peat land.

6. Revealed Comparative Advantage of Coconut Oil (HS. 15.13)

Coconut (*Cocos nucifera* L) is one of the essential plantation commodities in the national economy as a producer of vegetable oil in fulfilling the needs of the people

as well as export commodities. Almost all parts of the plant can be utilized so that the coconut plants are dubbed as Tree of Life. In addition, coconut plants are also a social crop because more than 95% are cultivated by farmers (KEMENTAN, 2014a).

The back to nature trend in industrial sector is an opportunity for the demand for world vegetable oils. Environmental issues and competition between food and energy are issues that are quite influential on world oil production. Expansion of oil palm plantations that have impact on clearing forest and decreasing soybean production are considered by importing countries so the permits on oil trade are very tight. Coconut oil is one of the alternative producers of vegetable oil that is environmentally friendly and not too competitive as a staple food (Sukmaya, 2017).

Indonesia's coconut production is currently concentrated on several major islands namely Sumatra, Java, and Sulawesi with an average productivity in the year 2014 of 11.36 tons/hectare (KEMENTAN, 2014a). Meanwhile, in ASEAN during the year of 1980-2012, the average growth of crops resulted in coconuts increased by 0.69% per year. In 1980, the total area of the plant produced coconut in ASEAN at 5.72 million ha and in 2012, there was an increase to 7.10 million ha. The crop area produces the highest achieved in 2012 with growth of 0.82% against the year 2011. The Revealed Comparative Advantage (RCA) value of Coconut Oil (HS. 15.13) are shown in Figure 6.

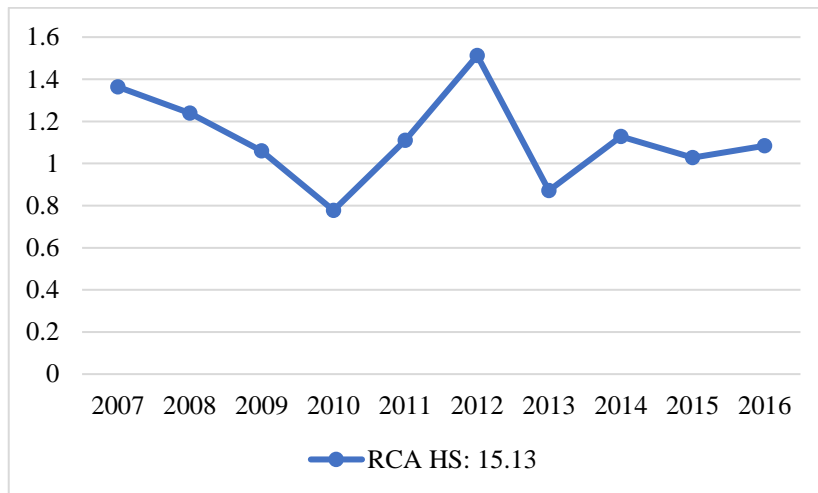


Figure 6. RCA Value of Coconut Oil

The Figure 6 showed that the competitiveness of Coconut Oil in ASEAN market is in the weak index to be a major exporter. The average of RCA in this product is 1.117319439 which is in Balassa index called Weak Comparative Advantage. The highest RCA point showed in 2012 with value 1.5.

The oil production Center in the world based on FAO data in 2008-2012 is in five countries namely Indonesia, Philippines, India, Brazil, and Sri Lanka (KEMENTAN, 2014). Indonesia ranked first as a country of coconut producers in the world with an average production of 18.09 million tons of coconut grains or contributed 30.12% to world coconut production. The second order was occupied by the Philippines with a contribution of 25.85% followed by India (17.54%), Brazil (4.95%), and Sri Lanka (3.47%). But the market share of Indonesian palm coconut in international market was the second largest after the Philippines (Sukmaya, 2017).

In Europe, our name for Indonesian coconut fruit products is quite good, said Nus Nuzulia as a Director General of Export Development Ministry of trade in Jakarta

2016. For about 3960 years ago, from 4000 years since historical records, it has been known to use coconut fruit as a food and health ingredient. During this period, it is noted that coconut fruit is very beneficial, without side effects. The coconut tree is seen as a sustainable resource that gives a crop that affects all aspects of people's lives in the tropics (Rahma Ayu Widiyanti, 2015).

In 2014, the world's coconut oil needs amounted to 2.18 million tons per year with a market value of 3.11 billion US dollars (Sukmaya, 2015). The market share of the world's coconut oil is supplied by two producers namely Indonesia and the Philippines with a total market share of 76.86%. The market share of each of the country's producers against the world in 2014 amounted to 35.31% for Indonesia and 41.55% for the Philippines, the rest was 8.58%; 8.59%; 1.44% consecutively supplied by Netherland (Netherlands), Malaysia and the United States and the remainder of 4.53% supplied by other countries.

7. Revealed Comparative Advantage of Cake of Coconuts (HS. 19.05)

During the year 1980-1997, the average growth of coconut production rose by 3% per year whereas during 1998-2013 its growth average of 0.85% per year. In general, there is a total increase in coconut production in Indonesia from 1,666,073 tons in 1980 to 3,067,980 tons in 2013, where the highest production of coconut achieved in 2009 is 3,257,969 tons or up 0.56% for the year 2008 (KEMENTAN, 2016b). The Revealed Comparative Advantage (RCA) value of Cake of Coconut (HS.19.05) are shown in Figure 7.

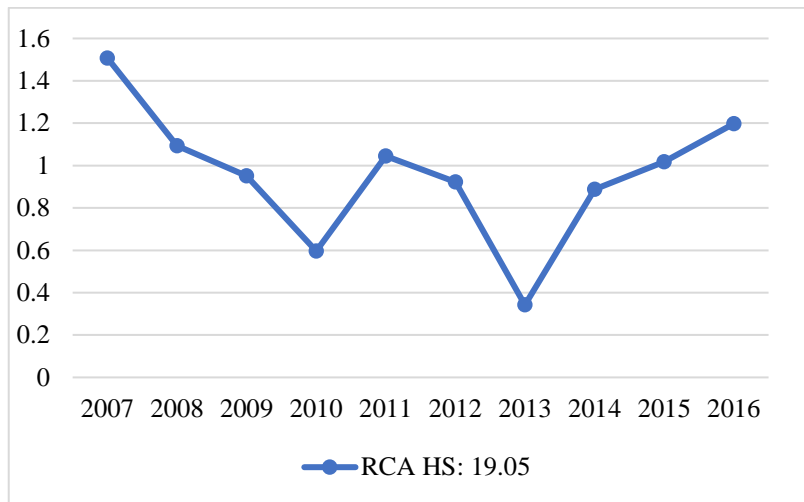


Figure 7. RCA Value of Cake of Coconuts

The Figure 7 showed that the competitiveness of Cake of Coconuts in ASEAN market is mostly low and unstable. The average value of Revealed Comparative Advantage of Coconuts cake is only 0.95 which classified on class A in RCA index or in Balassa index called Revealed Comparative Disadvantage.

Copra meal is available worldwide. In 2010, world copra production was 5.2 million tons and world copra meal production were 1.86 million tons. The main producer of copra and coconut oil is the Philippines (42% of the oil production in 2009), followed by Indonesia (25%) and India (12%). Half of the production of copra meal is sold for export and the Philippines alone exports 0.5 million tons (62.5% of its production) (FAO, 2011; Oil World, 2011; USDA, 2013). Copra meal was used to be a common feed ingredient in Europe, but importations had largely decreased since the 1990s, from 950,000 t in 1992 to 15,000 in 2013 (Beckman et al., 2017).

8. Revealed Comparative Advantage of Soybeans (HS. 12.01)

Indonesia is the largest soybean producer in the world and the largest soy market in Asia. The results of SUSENAS conducted in 2015, showing average Tempe consumption per person per year in Indonesia amounted to 6.99 kg and know 7.51 kg. Ironically, fulfillment of the need for soy which is the main raw material of Tempe and tofu, 67.28% or as much as 1.96 million tons should be imported from abroad. This happens because domestic production is not able to adequately demand for Tempe and tofu producers in the country (Ir. Dyah Riniarsi T., 2016).

Indonesia's soybean production center is in 7 (seven) provinces, contributing 86.34% to national soy production over the last five years, and 27 other provinces accounted for 13.66%. The biggest contribution was given by East Java province for 38.16% (average production of 338.01 thousand tons), followed by Central Java 13.95% (average production of 123.54 thousand tons), and West Nusa Tenggara 11.25% (the average production is 99.67 thousand tons). Four other centers of the province contribute below 10%, namely West Java 9.14% (average production of 80.94 thousand tons), Aceh 5.22% (the average production of 46.25 thousand tons), South Sulawesi 5.84% (the average production is 51.70 thousand tons), and IN. Yogyakarta 2.78% (average production of 24.63 thousand tons) (Ir. Dyah Riniarsi T., 2016).

The Ministry of Agriculture noted that Indonesian soy consumption in 2012 reached 2.5 million tons. This consumption is far from local production which is only 700-800 thousand tons per year. Therefore, the government desperately needed imports (about 70-80%) to provide for domestic needs. The Revealed Comparative Advantage (RCA) value of Soybeans (12.01) are shown in Figure 8.

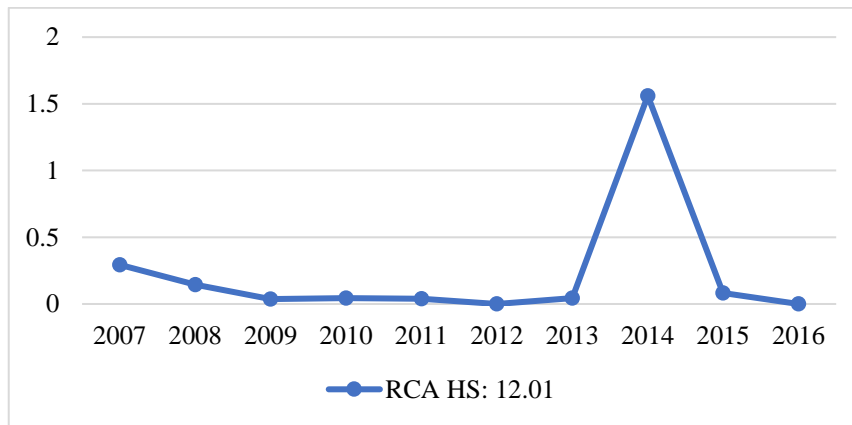


Figure 8. RCA Value of Soybeans

The Figure 8 showed that the competitiveness of Soybeans in ASEAN market is in the bad index to be a major exporter. The highest RCA point showed in 2014 with value 1.6. The average of RCA in this product is 0.224756933 which is in Balassa index called Revealed Comparative Disadvantage.

The total contribution of the soybean harvest area of the six central countries reached 90.39%, America gave the largest contribution of 29.07% or 31.23 million hectares, followed by Brazil with a contribution of 24.29% (26.09 million hectares), Argentina 17.34 % (18.63 million hectares), India 10.00% (10.74 million hectares), China 6.91% (7.42 million hectares), and Paraguay 2.79% (3.00 million hectares). The harvested area of Indonesia is ranked 13th in the world with a contribution of 0.56% or the average of the last five years harvested area of 603 thousand hectares against the average world soybean harvest area which reached 107.42 million hectares (Ir. Dyah Riniarsi T., 2016).

For the past five years the average world soybean productivity is 25.00 ku / ha. Indonesia's soybean productivity is still far below the world average of 14.39 ku / ha,

ranked 59th in the world. After comparing Indonesia's soybean productivity with the central and world countries, Indonesia still has a great opportunity to increase soybean production through intensification by increasing productivity as well as by extending through expansion of planting land. However, by optimizing the available resources and always innovating soybeans.

Various policies to stabilize soybean prices in the country have been done for a long time. In the early eighties, BULOG carried out procurement, storage and distribution of soybean. The goal is to ensure the availability of soybean for tofu/Tempe craftsmen especially for members of KOPTI (cooperative tofu Crafters-Tempe Indonesia). Domestic procurement only lasts for 3 years (1979/80-1982/83) and the number is very small or less than 1 percent of domestic production. Instead procurement through imports takes place annually with a considerable amount. Procurement through imports increased to 1.1 million tons in 1984, but then decreased dramatically in the following year and increased again to 490.9 tons in 1991 (KEMENDAG, 2013).

One of the factors causing low production of white soy in Indonesia, is the raw material of Tempe and tofu, not the original tropical plants so that the results are always lower than in Japan and China. Breeding and domestication have not fully changed the photosensitive properties of white soybeans. On the other hand, non-photosensitive black soy is less concerned with the breeding, although in terms of adaptation is more suitable for Indonesia.

Another international trade policy is the imposition of tariff ad valorem for soybean import. The tariff commenced from 1974 to 30 percent which was maintained

until 1980. From 1981 until the year 1993, soybean import tariff was lowered to 10 percent and then became 5 percent in 1994 until 1996. In 1997, the tariff was handed down again to 2.5 percent and finally the soybean import tariff was removed from 1998 (KEMENDAG, 2013). In January 2008, the Indonesian Government through regulation of the Minister of Finance or PMK set a zero percent import rate on soybean commodities due to the world's rising soybean price.

Furthermore, in 2011 the Ministry of Finance issued PMK No. 13/PMK.011/2011 which stipulates TBM for soybean commodity by zero percent until 31 December 2011. This means the tariff of customs duties for soybeans will be re-increased on 1 January 2012 to 5 percent. This step was done to support the soybean self-sufficiency program in 2014.

9. Revealed Comparative Advantage of Sugar and Honey (HS. 17.01/17.02)

Sugarcane plantations in Indonesia are cultivated by the people's farmers, state owned enterprises (companies) and private companies. Nowadays, people's plantations dominate the area of sugarcane plantations in Indonesia followed by large private plantations (PBS) and the state Large plantation (PBN). Sugar needs in Indonesia both white and refined crystals sugar are often higher than the production of sugar in Indonesia. There is a gap or difference between production and consumption causing Indonesia to always import to meet the shortage of domestic sugar consumption. The Revealed Comparative Advantage (RCA) value of Sugar and Honey (HS. 17.01/17.02) are shown in Figure 9.

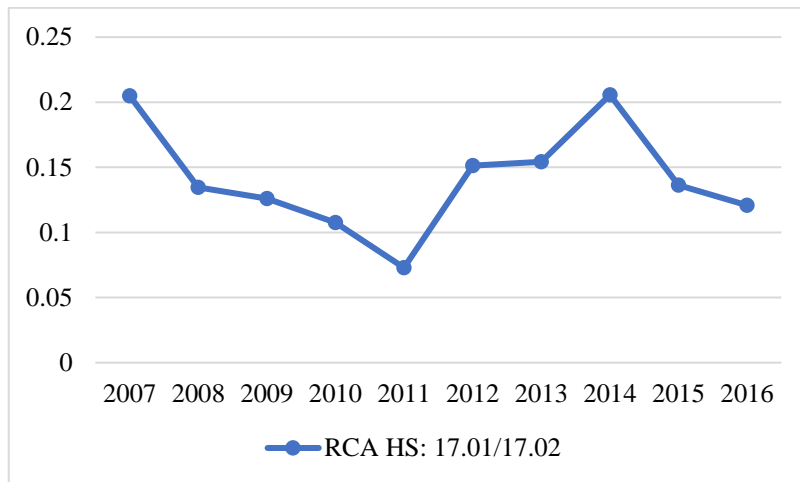


Figure 9. RCA Value of Sugar and Honey

Based on Figure 9, the value of RCA can be explained that Indonesian sugar and honey from 2007-2016 has bad competitiveness due to the value of RCA less than one in ASEAN market. The average of RCA in this product is 0.14142879 which is in Balassa index called as Revealed Comparative Disadvantage. This condition competitiveness of sugar commodities due to the inability of the national sugar industry in fulfilling the needs of domestic sugar so that the import of white sugar is relatively high.

Fuel price increases by the end of 2005 above 100 percent make production costs increase sharply, especially those sourced from transportation costs. As is known, transportation costs have a share of about 30 percent of the overall cost. Coupled with the increase of other costs as fuel prices increase, production costs increased to about Rp 4.400/kg of GKP.

The low competitiveness of Indonesian sugar in the ASEAN market is not detached from the inability of domestic production to meet the needs of national sugar due to processing inefficiencies, namely the capacity and technical efficiency of sugar

mills is very low. The low level of sugar factory efficiency is caused by the high cost of production and the old Sugar mill machine. This causes the sugarcane's yield that is received by low farmers and the quality of sugar produced also becomes less good. In addition to the inefficiency factor, low sugar cane also because the technology is not applied to the use of seed varieties superior to the cultivation of sugarcane so that the quality of milled sugarcane is also low. Along with the economic development of ASEAN countries and in the face of ASEAN single market in 2015, the government needs to prepare several strategies to revive the national sugar industry in order to compete in the ASEAN market.

10. Revealed Comparative Advantage of Coffee (HS. 09.01)

Indonesia is the largest producer of coffee after Brazil, Vietnam, and Columbia. In other word Indonesia is the second largest Robusta coffee producer after Vietnam. Among ASEAN countries, Vietnam ranks first as the country with the largest coffee production in the ASEAN region with an average production of 1,668,396 tons or contributing 68.26% to the total coffee production in the ASEAN region. Indonesia on average produces 572,460 tons of coffee in 2011-2015.

The contribution of Indonesian coffee production in the ASEAN region only reached 23.42%. The next largest coffee producing country in ASEAN is Malaysia with an average coffee production of 94,800 tons and contributing 3.88%. Furthermore, Thailand, Laos and the Philippines followed with production reaching 52,200 tons, 28,440 tons and 27,720 tons or contributing 2.14%, 1.16% and 1.13% of total coffee production in the ASEAN region (KEMENTAN, 2016c). The Revealed Comparative

Advantage (RCA) value of Coffee, Green, Husk, and Roasted (HS. 09.01) are shown in Figure 10.

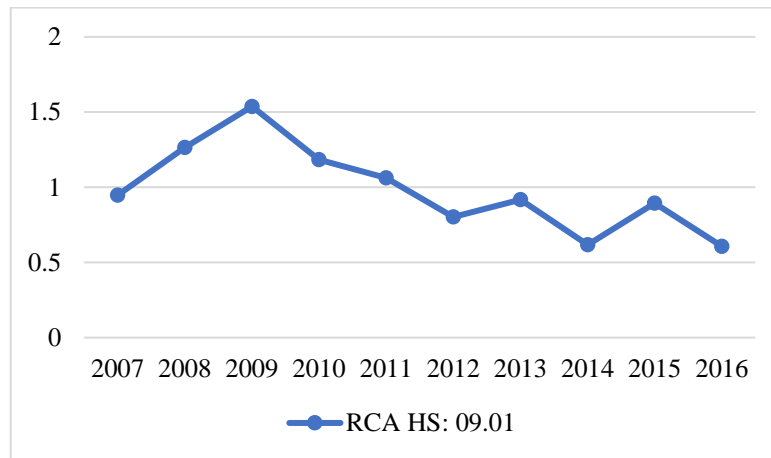


Figure 10. RCA Value of Coffee

From the Figure 10, Indonesia has weak comparative advantage since 2007 until 2011. The average of RCA in this product is 0.983540642 which is in Balassa index called Revealed Comparative Disadvantage. The highest RCA happened in 2009 which is almost 1.6 because the production in Indonesia is high. However, Coffee production in 2010 was estimated to about 658 thousand tons, a significant decline from 2009, this is because of the long rainy seasons in Indonesia.

The figured 10 also showed that coffee going down slowly since 2012 until 2016 inconsistency year of year. Coffee (HS: 09.01) is a traditional export item, which has been exported to many countries, including ASEAN members, Japan, USA, Eastern Europe, and the EU members. Indonesian coffee export destination in the form of fresh and processed total with the largest export volume in 2015 was the USA at 65,509 tons (13.05%). The next export destination countries that contributed

significantly were Germany at 47,664 tons (9.49%), Italy 43,048 tons (8.58%), Japan 41,241 tons (8.21%), Malaysia 39,394 tons (7.85%), Thailand 29,305 tons (5.84%), and Russia 26,940 tons (5.37%) (KEMENTAN, 2016c).

The current policy on coffee industry development is to improve the coffee quality, both for export market and domestic consumption, and to promote the downstream coffee industries and encourage coffee industry clusters. At the upstream coffee farming, application of good agricultural practices, sustainable coffee production by growing shade trees, encouraging organic fertilizer, and chemical fertilizer only when necessary, and promoting agriculture-forestry for the plantation inside the protection forest and around the forest margin. At the downstream, domestic processing is also promoted as currently the industry is made up of many small players, with four established brands taking up about 46 percent of market share.

The local coffee industry is trying to strengthen the domestic market by conducting intensive promotional campaigns and promoting the health benefits of drinking coffee. Availability of coffee is expected to improve due to rapid expansion of modern retailers and manufacturers' attempts to improve distribution through foodservice. Certification schemes in the coffee sector have emerged in conjunction with growing concerns of environmental governance since the early 1990s and developed more rapidly in this century. Sustainability perspective and long-term consequences of coffee practices on natural ecosystem and social-economic dimensions of the livelihood have been discussed more widely by academic, government, private sectors and civil society or non-governmental organizations (NGOs).

As the new development paradigms tend to seek alternatives for distortion effects of direct state intervention in commodity supply chain, in one extreme, these governance efforts are argued to democratize markets by increasing the role of civil society in regulating production and trade-related activities. On the other extreme, standard and certification institutions could serve simply as new vehicles of corporate control over global food production, trade and consumption.

11. Revealed Comparative Advantage of Tobacco (HS. 24.01)

Cultivating commodity tobacco spreads in most provinces (15 provinces) in Indonesia. Based on data on tobacco production of plantation people (PR), in the average year of 2009-2013, there are (three) provincial production centers that have a cumulative contribution up to 90.76%, namely East Java, West Nusa Tenggara (NTB) and Central Java. East Java contributes to the largest contribution of 49.03% to Indonesia's total production or 102,749 tons. The second stage is NTB amounting to 50,506 tons (24.10%), and the third is central Java for 36,952 tons (17.63) (KEMENTAN, 2014b). Tobacco products have a very important position in the economy and trade of the world. Commodity tobacco is a big business in international trade. The industry plays a big role in providing employment opportunities and resources for the world's people. Not only that, tobacco and cigarette industry has made a big contribution to the revenue of the country, both developed and developing countries. The Revealed Comparative Advantage (RCA) value of Tobacco (HS. 24.01) are shown in Figure 11.

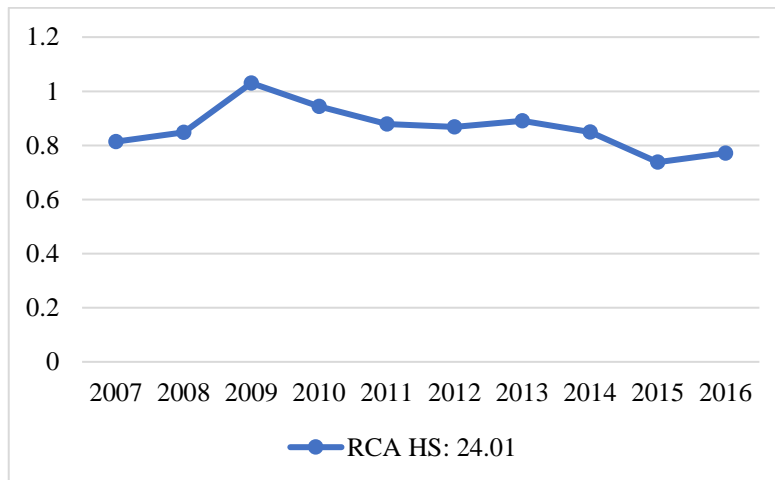


Figure 11. RCA Value of Tobacco

Based on Figure 11 the value of RCA can be explained that Indonesian Tobacco has bad competitiveness due to the value of RCA less than one in ASEAN market. The average of RCA in this product is 0.863190285 which is in Balassa index called Revealed Comparative Disadvantage.

Based on the average world tobacco production period 2008-2012, there were 7 (seven) countries of world tobacco producers with a total contribution of 76.60%. In the first position was China which contributed the largest of 43.00% or by 3,054,878 tons. The second and third positions were Brazil and India with 12.00% and 9.87% respectively. USA was fourth which contributes 4.73% or 335,837 tons. Indonesia was fifth with a contribution of 2.59% or 184,309 tons. The sixth and seventh positions were occupied by Malawi and Argentina with contributions of 2.44% and 1.96% respectively (KEMENTAN, 2014b).

During the last five years (2007-2011), the world's largest tobacco exports came from Brazil, with a contribution of 23.82%, equivalent to 612,104 tons. There were 7 (seven) other countries as the world's largest tobacco exporters, from a total of 135 (one

hundred thirty-five) world tobacco exporters which provide a total contribution of 63.65%. The seven countries were China (8.29%), India (7.93%), USA (6.98%), Malawi (5.89%), Turkey (3.96%), Argentina (3.42%) and Italy (3.35%). While the remaining 36.35% came from other countries besides the eight countries. Indonesia itself was in the 15th position with a contribution of 1.91% or 48,995 tons of total world tobacco exports (KEMENTAN, 2014b)..

Indonesian tobacco is mostly exported to the European Union. In 2011, it reached 15,698 tons or valued at USD 85.3 million. This value increased by 52.13% compared to 2007. Meanwhile, in period of January-May 2012, tobacco exports reached 6,409 tons or worth 34.3 million, a decrease of 8% in 2011 in the same period (KEMENDAG, 2012).

Tobacco products, in addition to being used to meet the needs of cigarette industry in the country, are also exported to various countries. In the year 2000 exports of Indonesian tobacco reached 35.9 thousand tones and tobacco imports reached 34.2 thousand tons (KEMENTAN, 2015),. The year 2010 Exports of tobacco rise to 57.4 thousand tons but imports also increased to 65.7 tons. The year 2016 exports of tobacco dropped to 21.9 thousand tons, and imports also dropped to 52.5 tons. The largest tobacco imports occurred in 2011 – 2013 which reachd above 100 thousand tons per year.

Indonesia is the country with the largest consumption of cigarettes in the world, namely in the third place after China and India. Tobacco consumption in Indonesia increased significantly, due to factors in increasing household income, population growth, low cigarette prices and the mechanization of the clove industry. Based on data

from the Tobacco Atlas in 2012, a number of smokers in Indonesia tended to increase from 182 billion cigarettes in 2001 to 260.8 billion cigarettes in 2009 (KEMENKES, 2018). Although the dangers of cigarettes have been widely informed, a number of smokers in Indonesia have not decreased. and even there is a tendency to increase every year.

AFTA is only valid for tobacco and does not apply to tobacco products (cigarettes). In Indonesia, tobacco import rates from AFTA member countries are reduced to 5% and will be reduced to 0%. However, based on the Coordinating Ministry for Economic Affairs Limited meeting with the Ministry of Trade and Ministry of Industry (December 2017), import duty for tobacco will be raised above 5%, but the number of ascents has not been decided.

12. Revealed Comparative Advantage of Crude Rubber (HS. 40.01)

Indonesia is the second largest natural rubber producer behind Thailand, but ahead of Malaysia since the last decades. In 2010, the rubber production of Indonesian was over 2.6 million ton or about one million ton lower than the rubber production in Thailand. The growth of natural rubber production in Indonesia is about 6.2 percent per year, a slightly behind the rate of Malaysia, but higher than t Thailand. The production estimate is not only because the growing demand of world market, the high rubber price in the last three years, but also because of growing attention on high yielding clonal rubber and positive externalities brought about by agroforestry system in natural rubber production. The Revealed Comparative Advantage (RCA) value of Crude Rubber (HS. 40.01) are shown in Figure 12.

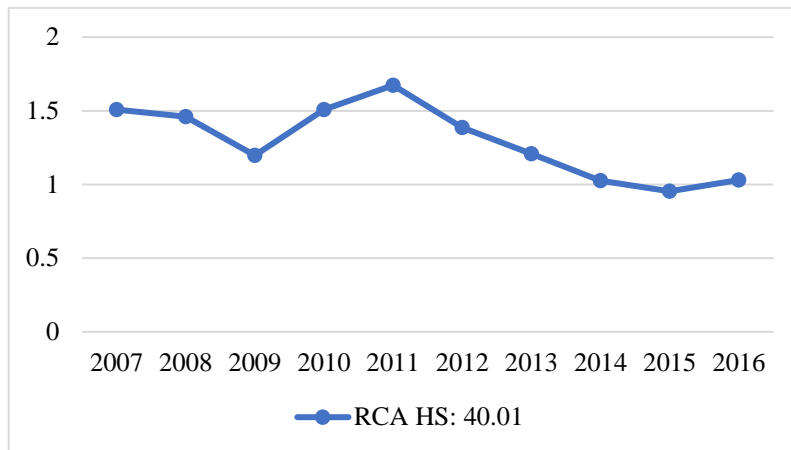


Figure 12. RCA Value of Crude Rubber

The Figure 12 showed that Indonesia has competitive advantage on crude rubber product. The RCA number mostly more than 1, but since 2011, the RCA number was going down slowly. The average of RCA in this product is 1.295242238 which is in Balassa index called Weak Revealed Comparative Advantage. The growth of rubber production in Indonesia is depend on the plantation area. While the world demand of natural rubber is growing so fast, but Indonesia cannot effort. However, the quality of rubber from Indonesia is generally not as good as the natural rubber from Malaysian and Thailand.

The performance of rubber production in Indonesia is very much reliant on harvested area, which experienced an increase from 3.3 million hectare in 2003 to estimated 3.4 hectare in 2004. In 2003, about 90 percent of 1.8 million ton of rubber production is exported, generating foreign reserves US\$ 1.7 million.

Moreover, the quality of raw rubber materials from Indonesia is generally not as good as the natural rubber from Thailand and Malaysia. There are no incentive systems and quality controls for smallholder growers to produce good quality rubber.

Rubber buyers such as traders and processing factories do not treat significant price differences between good and bad quality rubber from rubber growers or share tappers. These farmers often mix bark and other debris along with the latex to increase the weight of rubber slabs. After harvest, the rubber slabs are soaked in the water for many days, especially during dry season between May and September each year.

Indonesia is in 7th position for the import value of Singapore car tires. The country's main supplier of tire products in Singapore are Germany, Japan, Thailand and China. The Indonesian market share in Singapore is still very small at 4.44% when compared to other competing countries, especially Thailand. Thailand exports 12.64% of tire material to Singapore, much higher compared to Indonesia. One strategy carried out by producers or exporters from Indonesia to increase exports to Singapore is to collaborate with car tire companies in Singapore. Some of the major players in tire and car products in Singapore are Michelin, Goodyear, Hankook, Pirelli, Continental Tire, Stamford, Falken, and Bridgestone Tire (KEMENDAG, 2012).

Similarly, there are growing concerns among the rubber community to develop domestic markets. Indonesia is really in needs to encourage downstream industry investment, deepening industrial strategy, and improving the rubber-product quality. The downstream industry development could face a very serious problem because the incentive systems and quality controls for smallholder growers to produce good quality rubber are very weak. The majority (about 84 percent) of rubber producers in Indonesia is small-holder growers and concentrated mostly (more than 72 percent) in five production centers: North Sumatra, Jambi, Riau, South Sumatra and West Kalimantan.

However, the concerns to develop downstream rubber-based agriculture-industry are not only about how to establish the mutual linkages between upstream production system and downstream industry, the location preferences of improving added value of the industry, but also related to how to promote investment in such prospective sectors and to contribute to the industrial development in general. The rubber-based industrial development is obviously related to many segments of economic policy, including the technological advancement, information system and financial institutions, and legal issues and enforcement structures in general. Therefore, the development of domestic rubber industry needs more strategic approach and policy to better support a high quality of economic recovery in the country.

B. Discussion

Observation by RCA index shows that Indonesia has some commodities with low advantage and some with high advantage. Balassa's index identified the categories of Indonesian agricultural export commodities in ASEAN market 2007-2016 in three categories.

Rice, banana, pineapple, mangoes, sugar and honey, soybeans, tobacco, cake of coconuts, and coffee are categorized in class A of Balassa index. These products mostly have several issues to face on such as, the big demand in Indonesia itself or the production is not inadequate for domestic market, the commodities is not qualified due to global standards, continuity of supply is not guaranteed due to nothingness of technology application.

Coconuts oil and crude rubber are categorized in class B of Balassa index. Indonesia has a great potential for production of coconuts and rubber, primarily due to the large land area and big demand on Southeast Asian Countries. Development of production capacities and government policy that supported in these commodities should be implemented.

Palm oil is categorized in class D of Balassa index. Palm oil plantation in Indonesia are doubled since 2000 managed by private sector. While, the area managed by small family farmers tripled in term of plantation area. Mostly, an effective trade policy already focused on supporting the export of oil palm such as the regulation about export tariff. In addition, Malaysia, Myanmar, Singapura, Philippines, Vietnam, and Thailand have big demand for palm oil from Indonesia.