

### III. METHODOLOGY

The analysis method used in this study was a descriptive analysis. The method was used to process secondary data from ASEAN statistic by transcribing. The theory of data processing is to use Revealed Comparative Advantage (RCA) theory. Processed data is the export data of Indonesian countries and all countries in ASEAN. In the data, there are 12 commodities from 2007-2016. Descriptive analysis is used to analyze the changes and adjusted to government policies and regulations in ASEAN trade.

#### A. Sampling Technique

The data are used only from 2007-2016, due to export data of 2006 and before does indices were missing the data for many products.

Table 1. The ASEAN Selected Agricultural Commodities and the HS Code

No	Products and input	HS code
1	Rice, Including Husked and Broken Rice	10.06
2	Banana Fresh	08.03
3	Pineapple Production Excluding Fresh	08.04.30.00
4	Mangoes Pineapple Fresh, Including Guava, Mangosteen, Etc	08.04.30
5	Palm oil	15.11
6	Coconut Oil	15.13
7	Cake of Coconuts	19.05
8	Soybeans	12.01
9	Sugar and Honey	17.01/17.02
10	Coffee, Green, Husk, Roasted	09.01
11	Tobacco	24.01
12	Crude Rubber	40.01

All data following the Harmonized System (HS) at the four until eight-digit level classification were based on Minister of Finance Regulation Indonesia number 6/PMK.010/2017. The ASEAN Selected Agricultural Commodities for the 2007-2016 showed in Table 6.

### **B. Types and Source of Data**

In order to determine the comparative advantage of ASEAN Selected Agricultural commodities. The trade data covering the period between 2007-2016 was gathered from the ten annual data ASEAN Statistical Yearbook period 2007 until 2016. HS codes are used in this data, due to the fact over 190 countries and economies use the HS code as a basis for their customs tariffs and for the collection of international trade statistics. (Convention & Description, 2007)

### **C. Assumption**

The trade data covering the period between 2007-2016 was gathered from the ten annual data ASEAN Statistical Yearbook period 2007 until 2016. In those data there are commodity in some year which are empty or statistically uncounted. According to the data, the writer assumes the uncounted data is zero (0).

### **D. Operational Definition and Variable Measurement**

Trade data was used to determine the value of Selected Agricultural Products and Inputs. The trade data covering the period between 2007-2016 was gathered from the ten annual data ASEAN Statistical Yearbooks period 2007 until period 2016. The Harmonized System or HS are used in this paper. HS is a goods nomenclature

developed and maintained by the World Customs Organization (WCO) and it is governed by an international convention. Over 190 countries and economies use the HS as a basis for their customs tariffs and for the collection of international trade statistics (Convention & Description, 2007). Data classified into  $x_{ij}$  which was the total exported of Indonesia for a commodity,  $x_{in}$  which was the total value of export from Indonesia,  $x_{rj}$  which was the total export from the rest of the ASEAN for a commodity, and  $x_{rn}$  which was the total export of the ASEAN.

#### **E. Analysis**

(Bella Balassa, 1965) derived an index that measures a country's revealed comparative advantage in the trade of a particular product or industry by calculating the share of that product/industry in the country's total exports relative to the product/industry's share in total world export. The RCA concept that was promoted by Balassa is calculated as:

$$RCA_{ij} = \frac{(x_{ij} / x_{in})}{(x_{rj} / x_{rn})} \quad (1)$$

In equation (1),  $x_{ij}$  the total export of country  $i$  for the product classification,  $x_{in}$  the total value of export from country  $i$ , minus the total export of product. Meanwhile,  $x_{rj}$  is the total export from the rest of the world (world) for the product  $j$  minus the value of export with similar from country  $i$ . Next,  $x_{rn}$  is the total export of the

world minus the total export value of country *i*. The formula of  $RCA_{ij}$  would result in value between 0 until infinity. RCA value below 1 means that country I does not have comparative advantage for product x; similarly, if the RCA value is above 1, the product x from country i is having a comparative advantage. The index value of RCA either above or below 1 cannot be compared directly because it is asymmetric.

(Hinloopen & Marrewijk, 2001) commented on the Balassa index from a different perspective. In other words, the interpretation of Balassa index values was based on the classification of the RCA index values presented by them. These classifications are shown in Table 7.

Table 2. The Classification of RCA Index Values

Class A	$0 < \text{Balassa Index} \leq 1$	Revealed Comparative Disadvantage
Class B	$1 < \text{Balassa Index} \leq 2$	Weak Comparative Advantage
Class C	$2 < \text{Balassa Index} \leq 4$	Medium Comparative Advantage
Class D	$4 < \text{Balassa Index}$	Strong Comparative Advantage

As shown in Table 7, Class A includes all the products or industries/sectors for which a country does not have a revealed comparative advantage; the other three classes (B, C, D) approximately divide the products or industries/sectors related to the revealed comparative advantage into three levels: weak comparative advantage-Class B, medium comparative advantage -Class C and strong comparative advantage-Class D.