

# **THE LEVEL OF COMPARATIVE ADVANTAGES OF WORLD MAIN COFFEE PRODUCERS**

## **Tingkat Keunggulan Komparatif Produsen Utama Kopi Dunia**

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### **Abstrak**

Tingkat pertumbuhan produksi kopi dunia cenderung menurun dibandingkan dengan tingkat pertumbuhan konsumsi kopi dunia. Hal ini disebabkan oleh menurunnya produksi kopi di negara-negara penghasil utama. Hal ini berdampak pada jumlah kopi yang diekspor untuk pemenuhan kebutuhan kopi dunia. Penelitian ini menganalisis tingkat persaingan antar negara produsen utama dalam lima periode waktu dengan menggunakan analisis *Revealed Comparative Advantage* (RCA) dan *Dynamic Revealed Comparative Advantage* (DRCA). Hasil menunjukkan bahwa pada periode 2001-2003, rata-rata pertumbuhan daya saing antar negara paling tinggi dibanding periode lainnya. Hal ini dikarenakan adanya peningkatan ekspor yang cukup signifikan dari negara Honduras yang berdampak pada nilai RCA. Dalam periode 2012-2015, Colombia merupakan negara yang memiliki tingkat pertumbuhan daya saing paling tinggi karena peningkatan jumlah ekspor yang cukup signifikan. Perubahan daya saing dapat mempengaruhi perubahan posisi pasar ekspor suatu negara. Dalam periode 2012-2015, terdapat penurunan pangsa pasar yang terjadi di Vietnam, Ethiopia, India, Honduras, Guatemala dan Peru sedangkan peningkatan pangsa pasar terjadi di Brazil, Colombia, Indonesia, dan Uganda. Posisi Indonesia di pasar kopi dunia tahun 2015 yaitu *failing stars* dimana pangsa kopi Indonesia lebih tinggi dari pangsa kopi dunia. Peningkatan daya saing akan meningkatkan pangsa pasar suatu negara yang didukung oleh peningkatan teknologi, kualitas dan produktivitas kopi.

**Kata Kunci:** Ekspor kopi, Keunggulan Komparatif, Kopi, Pangsa Pasar

### **Abstract**

*The rate of world coffee production growth tends to decrease compared to the growth rate of world coffee consumption. This is due to the decline of coffee production in some major producing countries. This has an impact on the quantity of exported coffee to meet the demand of world's coffee. This paper analyzed the level of competition among major producing countries in five periods of time using the analysis of RCA and DRCA. The results showed that during the period 2001-2003, the average growth of competitiveness among countries was found to be the highest compared to other periods. This was due to a significant increase in export from Honduras which affected the value of RCA. During the period 2012-2015, Colombia became a country that achieved the highest growth rate of competitiveness due to the significant increase in the number of export. Change in competitiveness can affect the export market position of a country. During the period 2012-2015, the decline in market share occurred in Vietnam, Ethiopia, India, Honduras, Guatemala, and Peru, while the increasing market share occurred in Brazil, Colombia, Indonesia, and Uganda. Indonesia's position in the world coffee in 2015 was at failing stars in which the coffee share in that country was higher than in the world market. Increased*

*competitiveness will enhance the market share of a country that is supported by improvement of the technology, quality and productivity of coffee.*

**Keywords:** *Export of Coffee, Comparative Advantage, Coffee, Market Share*

**JEL Classification:** F13, Q02, Q17

## **INTRODUCTION**

The growth of world coffee consumption was faster than the world coffee production during the period of 2012/2013-2015/2016 (ICO, 2016). The level of world production experienced a decrease of 1.89 percent during that period, while the world consumption growth increased by 4.08 percent. In 2015/2016, coffee production in the world reached 147 994 (000 bags) while the world consumption of coffee reached 151 303 (000 bags).

The decrease of the world coffee production was due to the decline of production in the main coffee producers including Brazil, Colombia, and Indonesia (ICO, 2016). In fact, the increase of coffee consumption was caused by several reasons, such as: (1) the growth of coffee consumption in some countries (e.g. Russia, Eastern Europe, China), (2) changes in cultural pattern of drinking coffee, that is from conventional system (drip coffee) to modern pattern (espresso), (3) an increase in living standard and life

style which promote the increasing consumption of coffee in some producing countries such as Brazil, Mexico, Indonesia, Vietnam, and India (GAEKI, 2014).

The biggest robusta coffee producer during the growing season of 2015/2016 was dominated by Brazil which amounted to 2,905, 380 tons. Brazil produces two types of coffee, namely Arabica and Robusta, yet Arabica production is far higher than that of Robusta. Brazil becomes the world biggest of Arabica coffee producer for its successful programs to enhance the productivity, thus resulted in increasing production (Kustiari, 2007). Besides, there are some Arabica coffee producing countries, among others, Colombia, Ethiopia, Honduras, Guatemala, and Peru (ICO, 2016)

The second biggest world producing country is Vietnam in which Robusta coffee is mostly produced. This brings Vietnam as the biggest Robusta coffee producer in the world reaching 1,650,000 tons in 2015-

2016. Other Robusta coffee producers are Indonesia, India, and Uganda (ICO,2016). Indonesia produces Robusta and Arabica coffee but Robusta production has gained almost 74.76 percent (Ditjenbun, 2015).

Generally, some of the world major producing countries can meet the domestic need of each country. Moreover, the surplus of coffee production in each country will be exported to various export destination countries. During 2000-2015,there was an increase in the world coffee export by 31.49 percent with the export growth rate of 4.70 percent per year. The quantity of world coffee export in 2015 reached 6 944,589 ton, while it was only 5,281,467 ton in 2000. During the last fifteen years, Brazil achieved the highest export growth compared to the other major exporters. However, a country with the decreasing trend of export growth was Guatemala with the growth rate of - 37.11 percent. This condition was due to coffee farmland conversion for non-agricultural investment and disease attacks on coffee leaves which led to declining production of Guatemala coffee export.

The fluctuations in the value of exports of coffee in international trade

can not be separated from the competitive and comparative advantage which are deeply affected each other (Baroh *et al.*, 2014). Fluctuation of coffee export quantity in several major exporting countries for the last fifteen years is expected to support a country position in facing the competition with other major exporters.

The number of fluctuating exports is due to supply and demand factors (Krugman & Obstfeld, 2005; Salvatore, 1997). The supply factors are production quantity, export price, domestic price, exchange rate, raw material import, and policy. The price of coffee and the price of production means such as fertilizer can affect the amount of coffee production (Luthfi & Azhar, 2011). The higher the coffee production the higher the amount of coffee that can be exported. In addition, the existence of a country's tariff policy has an impact on the amount of coffee exports (Kustiari, 2007). Another factor is that the membership of export destination countries in the World Trade Organization has a positive impact on the export volume (Meiri, 2013). The demand factors affecting coffee exports include export prices, real exchange rates, world revenues, and

devaluation policies. The high value of coffee exports is determined by the quality of coffee (Dradjat et al., 2007; Gebre, 2015). The exported coffee should meet the requirement of International Coffee Organization No 407 about Coffee Quality Improvement Program. Quality and continuity of coffee become the main concern of exporting countries in fulfilling the export market.

The growth in the volume of coffee exports of the world's coffee-producing countries such as Brazil, Honduras, Guatemala and Peru is lower than its production growth during the 2000-2015 period. However, the opposite is shown in Colombia, Ethiopia, Indonesia, Vietnam, India and Uganda. The different conditions will affect the coffee trade of a country in the international market.

Competitiveness analysis is important in global competition or hyper competitive (Tambunan, 2001). Hyper competitive analysis will make each country determine the right strategy to survive in the increasingly difficult level of competition (Hamdy, 2001). Strong-and-weak competitiveness of a commodity in the international market largely determines the size of the export volume of a

commodity. That change is due to the ability of a country to meet the demand of consumer and international requirement of exporting coffee. Based on those conditions, it is important to analyze the level of competition and position major exporting countries in dynamic of time. Furthermore, it is necessary to make strategic efforts to improve the competitiveness of a country through various policy recommendations.

## **METHODS**

This study analyzed the competitiveness of coffee according to the coffee export in major exporting countries such as Brazil, Vietnam, Colombia, Indonesia, Ethiopia, India, Honduras, Uganda, Guatemala, and Peru. This research applied method of Revealed Comparative Advantage (RCA) to analyze coffee competitiveness level of a country. Change in competitiveness can affect the change in export market position of a country thus it was analyzed using the Dynamic Revealed Comparative Advantage (DRCA). Data used were time series data between 2000-2015 which included ten world major coffee exporting countries. Source of data was obtained from the International

Coffee Organization (ICO 2016) and United Nation Comtrade Database (UN-Comtrade, 2017).

The amount of export of a country indicates comparative advantage of a country. It can be determined by using Revealed Comparative Advantage (RCA) or Balassa index. The higher the comparative advantage of a specific product, the higher the possibility of a country as a net exporter becomes (Widodo, 2010). It is shown by RCA value that is greater than one. If RCA value is less than one, it indicates that the country does not have comparative advantage, thus the value of RCA is  $0 \leq RCA_{ij} \leq \infty$ . It can be seen in equation 1 and 2.

$$RCA_j = \frac{(x_{ij})(\sum_j x_{wj})}{(x_{wj})(\sum_j x_{ij})} \dots\dots\dots(1)$$

$$RCA_j = \frac{\frac{x_{ij}}{\sum_j x_{ij}}}{\frac{x_{wj}}{\sum_j x_{wj}}} \dots\dots\dots(2)$$

Change in the competitiveness of commodity in a country during a certain period can determine the position of the commodity in the market. This condition can be analyzed using Dynamic Revealed Comparative Advantage (DRCA) (Edwards & Schoer, 2002). The

formulation can be found in Equation 3 and 4.

$$DRCA = \frac{\Delta RCA_j}{RCA_j} \dots\dots\dots(3)$$

$$DRCA = \frac{\Delta[x_{ij}/\sum_j x_{ij}]}{x_{ij}/\sum_j x_{ij}} - \frac{\Delta[x_{wj}/\sum_j x_{wj}]}{x_{wj}/\sum_j x_{wj}} \dots(4)$$

Where:

- RCA<sub>j</sub> : Comparative advantage of a country towards commodity j
- DRCA : Dynamics of competitiveness
- x<sub>ij</sub> : Total export of commodity j from country i (USD)
- X<sub>wj</sub> : Total export of commodity j from all countries (world) (USD)
- ∑<sub>j</sub>x<sub>ij</sub> : Total export of all commodities from country i (USD)
- ∑<sub>j</sub>x<sub>wj</sub> : Total export of all commodities from all countries (world) (USD)
- j : Commodity j
- i : Country i

According to Table 1, the position of the most wanted export market of a commodity can be identified by a country in the condition of rising stars. This happens because the increase of certain commodity

export share in a country is bigger than the increase of world export market share. Under these conditions, a country has the ability to increase the export destination market and even open up new markets.

**Table 1. Market Position of Exports**

	Share j in country exports		Share j in world exports		Market position of exports
Increasing RCA	↑	>	↑		Rising stars
	↑	>	↓		Failing stars
	↓	>	↓		Lagging retreat
Decreasing RCA	↓	<	↑		Lost opportunity
	↓	<	↓		Leading retreat
	↑	<	↑		Lagging opportunity

Source: Edwards and Schoer (2002)

## DYNAMICS OF INDONESIAN COFFEE

Most of Robusta coffee is grown in Indonesia with an area of 73.54 percent in 2015 while the rest is Arabica coffee (Ditjenbun, 2015). In 2015, coffee planting area reached 1,233,227 hectares. The largest coffee growing areas in Indonesia are South Sumatra, Lampung, Aceh, East Java, Bengkulu and North Sumatra. Coffee cultivation in Indonesia is managed through public plantations (PR), state plantations (PN), and private plantations (PS) with percentage rate of 96.12 percent each; 1.83 percent; and 2.14 percent with the number of

national coffee farmers reached 1,789,283 households.

In general, Indonesia's coffee productivity decreased by 0.79 percent per year in the period of 2014-2016. Indonesia's coffee productivity level reached 744 kg per ha which is much lower than the main competitor countries such as Vietnam which reached 2 tons per ha. The productivity increase of Indonesian coffee needs to be improved through various efforts such as the use of superior seeds (technology), appropriate coffee maintenance management, and rejuvenation of old coffee plants. The efforts in increasing productivity, production, and development targets (planting area and harvested area) in coffee-based agroforestry should be supported by the readiness of production technology (Supriadi & Pranowo, 2015; Sudjarmoko, 2013).

Indonesia's coffee trade activity has shifted export destination countries. The market share of export destinations to Europe and America tends to decline by 2015. Asian regions such as Malaysia, Thailand and India tend to increase exports from Indonesia. Indonesia coffee offer in Japan and Australian are affected

by the supply of coffee (Baroh et al., 2014).

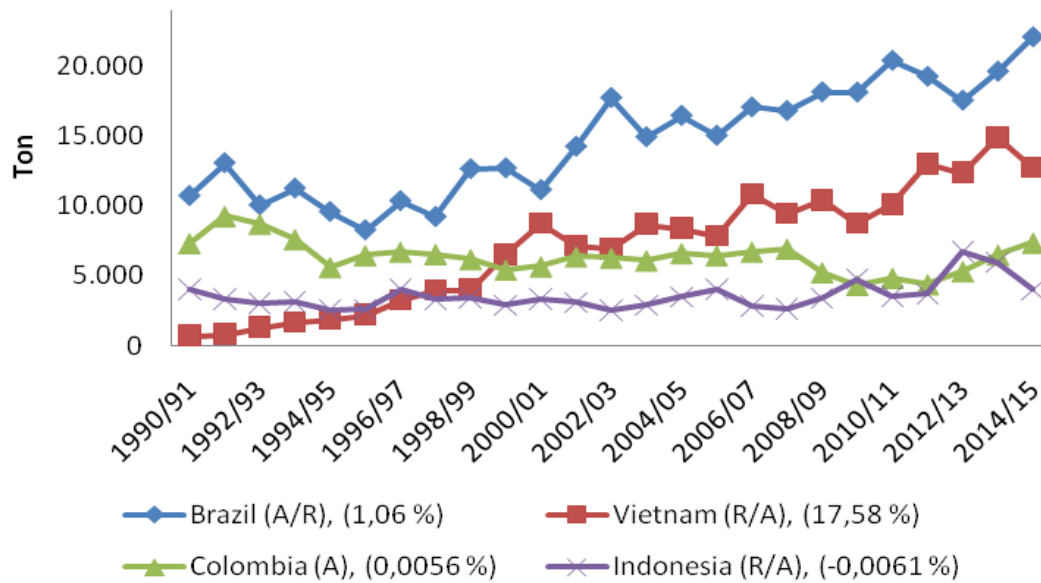
The increase of Indonesian coffee exports is predicted to increase in 2012 to 2021 with the growth trend of 1.6% every year (Chandra et al., 2013). However, in the period of 1990-2015, Indonesia's coffee bean exports fluctuated with an average growth rate of 3.56 percent per year (UN Comtrade, 2017). The growth of national coffee exports is quite slow compared to other Robusta countries such as Vietnam (9.08 percent), India (5.31 percent). This is due to the slow growth of the area with the 0.63 percent per year rate so that the increase in coffee production tends to be low.

### **DYNAMICS OF WORLD COFFEE**

The major Arabica coffee producing countries are Brazil, Colombia, Ethiopia, Honduras, Guatemala, and Peru. Moreover, the major robusta coffee producing countries include Vietnam, Indonesia, India, and Uganda. Indonesia was the major Robusta coffee producing country in the world before 1998, yet leaf rust disease outbreak resulted in

decreasing production thus impacted on declining export. During the same period, Vietnam succeeded in increasing the production through several policies established by the government such as: mass migration, land reform, plant selection, and application of appropriate technology (Marsh, 2007). In growing season 2013/2014, Vietnam achieved the highest coffee export which was resulted from increasing production due to increase in harvesting area and beneficial weather factor (Ministry of Industry RI, 2014).

If compared to other competitor countries (Brazil, Vietnam, Colombia), only Indonesia experienced declining coffee export during 1990-2015 (Figure 1). Before 1997/1998, Indonesia was the world biggest Robusta coffee exporter, yet Indonesian export continued to decrease after 1997/1998 due to declining production in many production center areas in Indonesia. Since 1998/1999 until today, Vietnam is able to compete Indonesia so that It becomes the biggest robusta coffee exporter in the world.

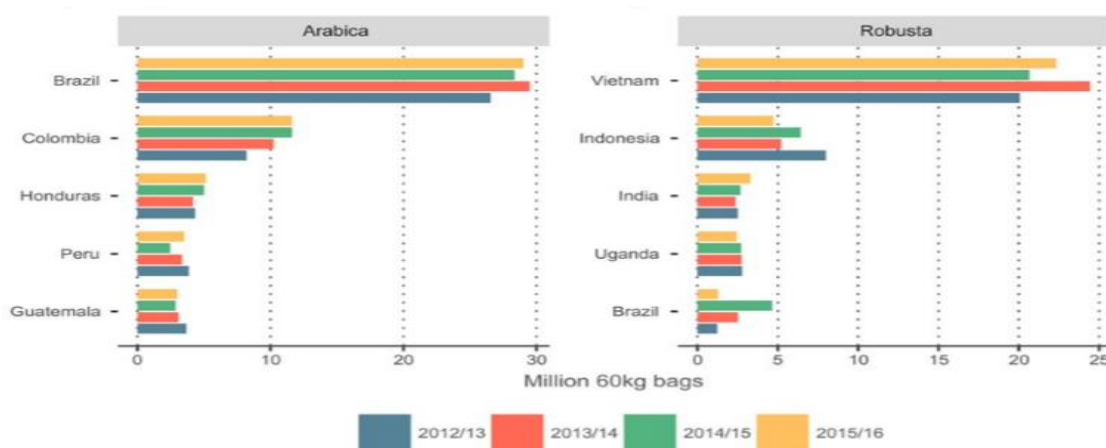


**Figure1. The Development of World Coffee Export in Major Producing Countries, 1990-2015**

Source: ICO (2016), Processed

Changes in export during 1990/1991 until 2014/2015 indicated dynamic and shift of competitiveness between world coffee producers. These producing countries conduct several efforts to increase the market share of world coffee. Competition in international coffee market insists coffee producers

to enhance the production and quality of coffee to meet the demand of consumer. In addition, coffee to be exported should meet the Resolution of International Coffee Organization No.407 in Coffee Quality Improvement Program (AEKI, 2013).



**Figure 2. Five Major Robusta and Arabica Exporting Countries in the World**

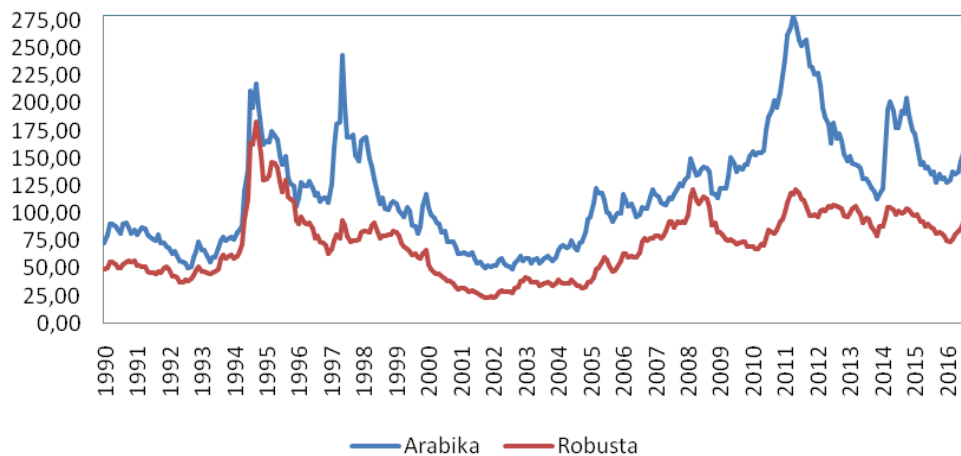
Source : ICO, 2016



Figure 2 shows Vietnam's highest export of coffee during the planting season of 2013/2014. The increased production was due to increased area of harvest and favorable weather factors (Ministry of Trade, 2014). In contrast, there was a declining condition in Indonesian coffee exports. The reason was that there were coffee plantations that have

been above 25 years old causing the decline in coffee productivity (Ministry of Trade, 2014).

In addition, the dry season that came early reduced the flowering of coffee plants, while excessive rain reduced the yield. Another cause was the area of coffee in the period 2010 to 2014 decreased by 0.29 percent/year (Ministry of Agriculture, 2015).



**Figure 3. World Price of Arabica and Robusta Coffee (US cents/lb)**

Source : ICO (2016)

The world market conditions of Robusta and Arabica coffee experienced an increase in prices in the period of 1990 to September 2016 (Figure 3). Selling price of coffee in the international market also shows upward trend over the years. Price of Arabica coffee in September 2016 reached 158.29 US cents/lb, while price of Robusta coffee in October 2016 was 103.65 US cents/lb in which

those prices were the highest in the period January 2015-October 2016. Compared to the year 2015 which achieved 88.05 US cents/lb, the increasing price during the months was due to decreasing supply of Robusta from several major producing countries. Even though the trend of coffee price showed an increase, the world coffee consumption level did not decrease, yet increased every year.

During 2011-2016, the world consumption of coffee increased by 8.47 percent.

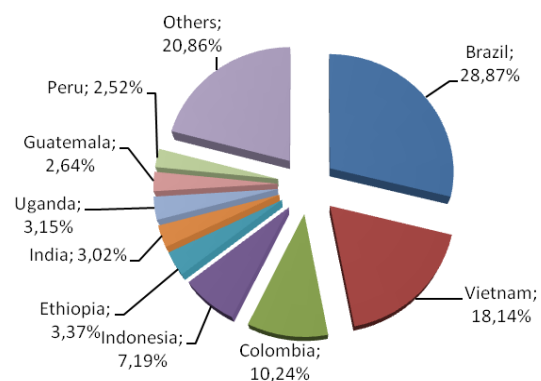
## RESULTS AND DISCUSSION

### The Level of Competition for The World's Major Coffee Exports

The quantity of coffee export from various world coffee producing countries increased during 2010-2015 with an average increase of 4.7 percent. However, the quantity of world coffee export in 2000 reached 5,281,467 tons, while the export of world coffee in 2015 amounted to 6,944,589 tons. It means that the increase of coffee export during the period was only 31.5 percent. World coffee export in 2015 was still dominated by Brazil as the biggest Arabica coffee producer with market share reaching 28.87 percent and average growth of export quantity per year of 5.63 percent (Figure 4).

Brazil was also included as one of the five biggest Robusta coffee exporters after Vietnam, Indonesia, India, and Uganda (ICO, 2016). The biggest market share of Robusta coffee producer was still placed by Vietnam with market share of 18.14 percent. Despite of the fact that Indonesia is the second biggest Robusta coffee producer, market

share of Indonesia was far behind Vietnam. The average growth of Vietnamese coffee export quantity reached 9.08 percent/year, while Indonesia only achieved 5.36 percent. Vietnam and Indonesia are countries that produce both types of coffee, yet Robusta coffee is more dominant to be produced and exported. The result indicated that a country experienced negative growth average of export quantity was Guatemala that was 2.43 percent/year.



**Figure 4. Export Market Share of World Coffee in 2015**

Source : UN Comtrade (2017), processed

During the last fifteen years, the quantity of coffee export from that country continued to decrease due to land conversion for investment which frequently occurs. The highest decline was in 2015 as a result of disease which attacked the leaves thus affected the coffee production.

Comparative advantage of world coffee was analyzed in the form of

beans (not roasted, not decaffeinated) with HS code: 090111 which was measured using Revealed Comparative Advantage (RCA). Based on Table 2, the ten world major coffee

exporting countries had comparative advantage. It is shown by the value of RCA which was greater than one. Ethiopia achieved the highest RCA value compared to other countries.

**Table 2. RCA of The World Major Coffee Exporting Countries**

Year	Country									
	BRA	VNM	COL	IDN	ETH	IND	HND	UGA	GTM	PER
2000	23.21	28.40	66.54	4.12	434.72	3.34	133.62	225.62	174.75	26.73
2001	24.95	31.09	74.80	3.90	430.72	4.77	133.49	250.44	152.95	31.79
2002	26.68	25.98	87.58	5.16	518.71	3.76	255.29	268.64	158.55	33.08
2003	24.42	34.39	84.53	5.64	485.11	3.56	252.36	257.46	155.96	27.54
2004	24.35	32.55	76.36	5.29	406.37	2.70	289.59	255.01	150.52	30.64
2005	24.62	26.10	80.48	6.74	40.75	2.73	295.12	245.59	100.03	20.74
2006	24.05	34.56	67.81	6.55	78.42	2.94	234.58	221.11	164.19	24.52
2007	22.37	41.90	60.81	5.91	344.20	2.13	221.98	201.91	89.06	16.17
2008	21.69	34.95	52.01	7.50	360.60	2.22	*)	220.74	86.79	21.38
2009	22.20	27.12	42.40	6.37	206.06	1.32	179.52	153.21	72.94	19.71
2010	23.25	22.54	41.89	4.56	265.42	1.53	194.29	146.31	74.73	21.94
2011	21.87	19.76	32.05	3.56	226.64	1.57	250.65	148.84	73.22	24.09
2012	18.63	24.19	25.03	5.17	243.31	1.66	225.10	124.21	74.76	17.43
2013	20.74	20.86	35.10	7.00	207.15	1.83	*)	193.20	77.85	17.99
2014	24.29	19.69	40.85	5.30	163.49	1.52	156.28	163.68	55.45	17.24
2015	25.50	12.68	62.10	6.94	177.49	1.78	*)	155.26	54.48	15.30

Source: UN Comtrade (2017), processed  
 Note : \*): No data available

Although the value of RCA Ethiopia is highest among other countries, the market share of Ethiopia reaches only 3.37 percent which is much smaller than Brazil reaching 28.7 percent. In 2015, the value of Brazilian coffee exports in 2015 reached USD 5.5 billion or 2,005 million tons. Ethiopia only exports coffee to the

world market of 234 million tons or USD 1 billion.

Ethiopia has not yet maximized its position as the producer of some of the best coffee in the world (Petit, 2007). Even though Ethiopia has comparative advantage in the export of coffee, it cannot be said of its overall performance on the international

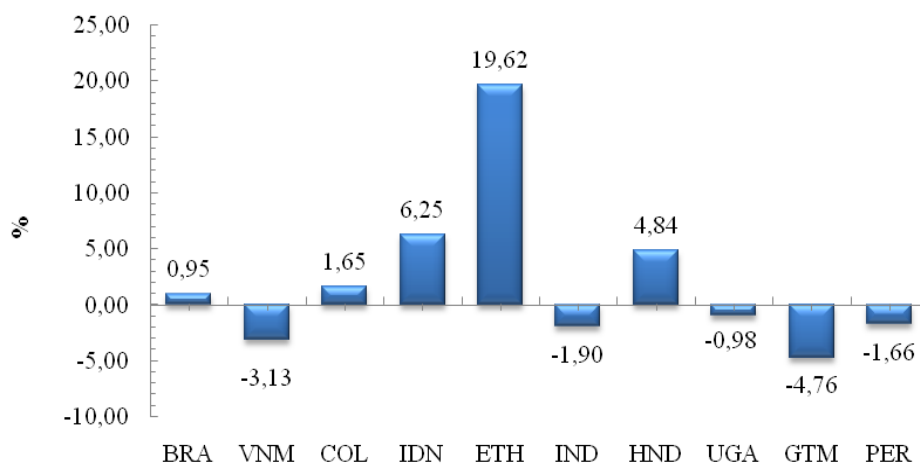
market owing to challenges with management of price risk, high transaction cost resulting from the extensive nature of the supply chain and the numerous actors and processes there in, challenges with quality control, low productivity of growers' fields, and incidence of smuggling (Boansi and Crentsil, 2013).

In contrast, India has reached the lowest RCA value compared to other countries, yet the quantity of coffee exported was higher than that of Guatemala, and Peru in 2015. Coffee exported by India reached 3.02 percent of the world total export of coffee in 2015.

Compared to the world major Robusta coffee exporters (e.g. Vietnam, Indonesia, India, and

Uganda), a country that had the highest RCA value was Uganda. It was because the coffee export value of Uganda was higher than the value of all commodities exported by Uganda which amounted to 17.7 percent in 2015. Besides, the values in Vietnam, Indonesia, and India were 1.45 percent; 0.79 percent; 0.20 percent, respectively.

However, if it is seen from the quantity of coffee exported to the world market at the same year, Vietnam was the country exporting the highest quantity of 1,259,448 tons or about 18.14 percent of the total export of world coffee. While Indonesia exported 499 613 tons or approximately 7.19 percent of world coffee total export in 2015.



**Figure 5. Average RCA Growth of Each Country Per Year**

Source: UN Comtrade (2017), processed

Based on Figure 5, the average growth of RCA per year was fluctuated. Brazil was the world biggest coffee exporter with RCA growth of 0.95 percent/year. Besides, Vietnam was the second biggest exporter in the world which experienced decrease in competitiveness during the last fifteen years. It is shown by the negative average growth of RCA, that was 3.13 percent/year with the average growth of coffee export quantity of 5.63 percent/year. The negative average of RCA growth obtained by Vietnam was caused by a decrease of coffee export quantity in 2001, 2002, 2008, 2013, and 2015 with the highest decline occurred in 2001 which amounted to 55.34 percent. With the similar characteristics of coffee type exported by Vietnam, the average RCA growth per year of Indonesian coffee was higher than that of Vietnam. It was due to the trend of Indonesian RCA value from 2000-2015 in which the value obtained by Indonesia was higher than Vietnam, yet the market share of Vietnam was still twice and half higher than that of Indonesia. The main factors affecting competitiveness of Vietnam's export coffee are production factor conditions (e.g. natural conditions, human resources, capital,

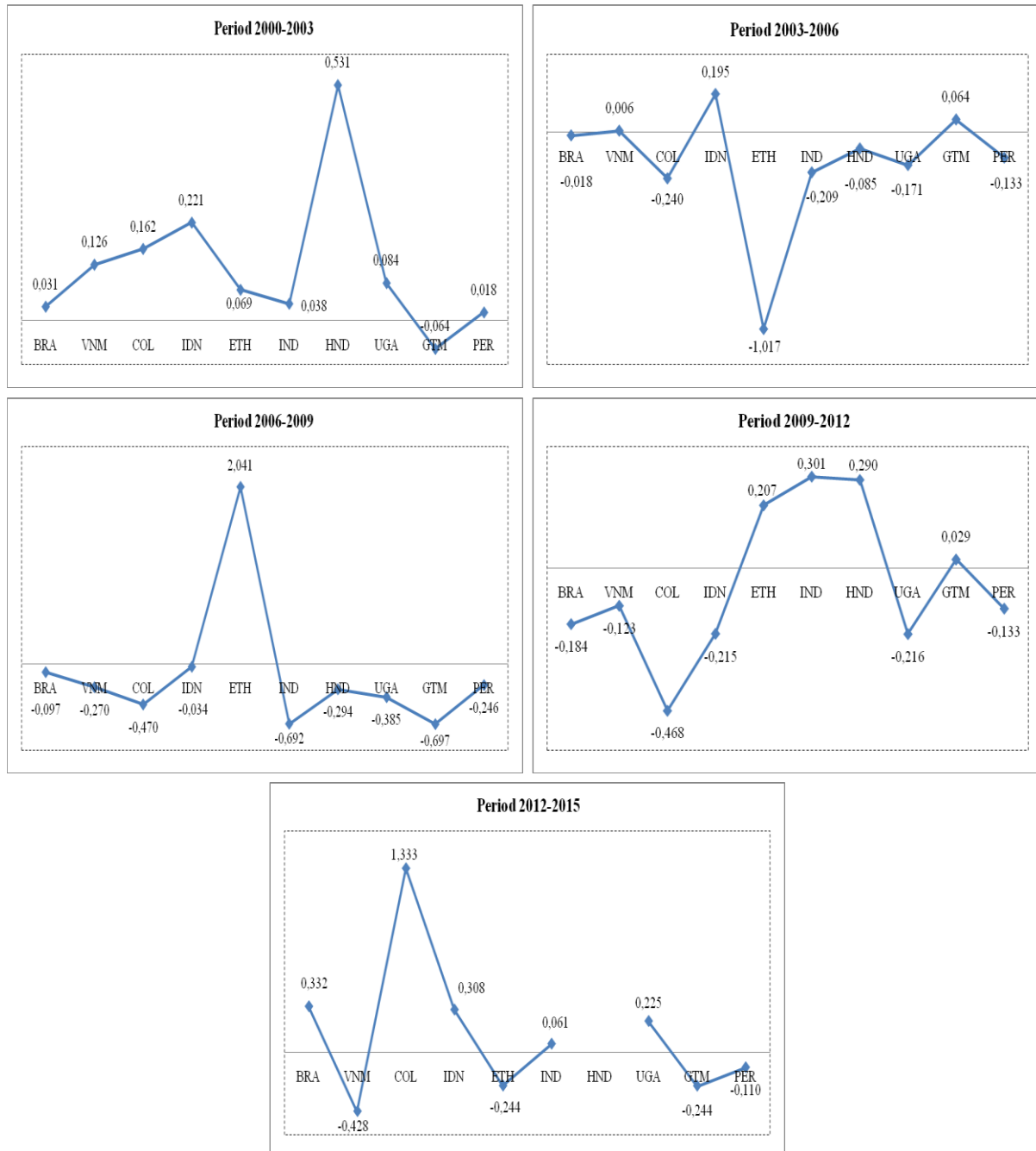
infrastructure), national condition, related and supporting industries to coffee export, firm strategy, structure, rivalry, the role of the government, and the role of opportunity (Nhien, 2016).

The average growth of RCA which experienced a decrease was found in Vietnam, India, Uganda, Guatemala, and Peru. The highest decline was obtained by Guatemala as much as 37.62 percent during the period 2011- 2015. This is due to weather anomaly, pest, and disease which attacked coffee plant in Guatemala. Positive RCA growth was seen by Brazil, Colombia, Indonesia, Ethiopia, and Honduras. High RCA obtained by Ethiopia was caused by the share of coffee export value towards all exported commodities in the country which was higher compared to other countries. Even though the RCA growth per year of Ethiopian coffee was the highest, the quantity of exported coffee was still far below Brazil, Vietnam, Colombia, and Indonesia. Competitiveness of the world major coffee exporters has changed during a certain period of time. In general, the growth of coffee export share of the major coffee exporters during the period 2000-2003

was higher than the growth of world coffee export share (Figure 6).

The growth of Honduras coffee export was the highest among other countries, while Guatemala had the

lowest one. However, during the period 2006-2009, the quantity of Ethiopian coffee export had increased which led to higher growth than that of the world coffee export.



**Figure 6. RCA Dynamics of World Major Coffee Exporting Countries in Five Periods of Time**

Source: UN Comtrade (2017), processed

Different from the period 2003-2006, the growth of coffee export done by Guatemala was higher than the growth of world coffee export. On the other hand, the growth of Ethiopian coffee export was far below the growth of world export because of the quantity of exported coffee significantly decreased.

During the period, most of exporting countries had lower their export growth than that of the world. Yet, during the period 2009-2012, Indonesia, Honduras, Ethiopia and Guatemala had positive growth compared to the previous period. During the last period (2012-2015), the growth rate of coffee export quantity of Colombia was at the highest peak for the last fifteen years. The competitor coffee in Columbia are Japan and the Netherlands (Baroh *et al* 2014). The growth of coffee export share of a country depends on the value of coffee export of a country and the value of total export of that country.

This situation occurred was due to declining coffee share in exporting country which was lower than coffee share in the world market. During that period, they were only Honduras and Guatemala which obtained increasing RCA. Honduras was at failing stars in

which the coffee share in that country was higher than coffee share in the world market that experienced a decline (Table 3). Furthermore, Guatemala was at lagging retreat in which decrease in coffee export in that country was higher than the decreasing export in the world market.

In Period 2 (2003-2006), there were some countries considered to achieve rising stars i.e. Vietnam, Indonesia, and Guatemala. In that condition, coffee share in each country was higher than the coffee share of the world. This position is the most wanted position by each country in facing competition between countries involved. In addition, those countries tried to increase market share through quality improvement. There was a development of coffee quality to increase the export market and domestic consumption (Arifin, 2013). This condition was seen by increasing RCA value. The value of DRCA was the highest among those three countries, namely Indonesia with the value of 0.195. It was indicated by the growth of export quantity which amounted to 28.3 percent at the same period. During this period, several other coffee exporting countries also suffered from declining RCA which

reflected changes in competitiveness, included Brazil, Colombia, Ethiopia,

India, Honduras, Uganda, and Peru.

**Table 3. Change in Position of Each Country in Coffee Export Competition**

No	Country	Period 1	Period 2	Period 3	Period 4	Period 5
		2000-2003	2003-2006	2006-2009	2009-2012	2012-2015
1	Brazil	Leading	Lagging	Lagging	Lost	Failing
		Retreat	Opportunity	Opportunity	Opportunity	Stars
2	Vietnam	Leading	Rising	Lost	Lagging	Lagging
		Retreat	Stars	Opportunity	Opportunity	Retreat
3	Colombia	Leading	Lost	Lost	Lost	Failing
		Retreat	Opportunity	Opportunity	Opportunity	Stars
4	Indonesia	Leading	Rising	Lagging	Lost	Failing
		Retreat	Stars	Opportunity	Opportunity	Stars
5	Ethiopia	Leading	Lost	Lagging	Rising	Lagging
		Retreat	Opportunity	Opportunity	Stars	Retreat
6	India	Leading	Lagging	Lost	Rising	Leading
		Retreat	Opportunity	Opportunity	Stars	Retreat
7	Honduras	Failing	Lagging	Lost	Rising	*)
		Stars	Opportunity	Opportunity	Stars	
8	Uganda	Leading	Lagging	Lost	Lost	Failing
		Retreat	Opportunity	Opportunity	Opportunity	Stars
9	Guatemala	Lagging	Rising	Lost	Rising	Lagging
		Retreat	Stars	Opportunity	Stars	Retreat
10	Peru	Leading	Lagging	Lagging	Lagging	Lagging
		Retreat	Opportunity	Opportunity	Opportunity	Retreat

\*) : No Data Available

Compared to the previous period where increase and decrease in RCA value existed, during the period 3 (2006-2009), ten coffee exporters faced declining RCA. This decrease in RCA was seen from the result of DRCA analysis. Declining RCA occurred along with the condition of lagging opportunity which was faced by Brazil, Indonesia, Ethiopia, and Peru. In that condition, the increase in coffee share of each country was lower than that of the

world. Moreover, decreasing RCA also occurred in Vietnam, Colombia, India, Honduras, Uganda, and Guatemala with position of lost opportunity. This position was shown by declining coffee share in each country which was lower than increase in the world coffee share. It shows that those countries could not take an opportunity to increase their market share.

In period 4 (2009-2012), there were several countries experienced



the increase of RCA compared to the previous period, namely Ethiopia, India, Honduras, and Guatemala. Each of those countries obtained higher domestic coffee share than the world coffee share thus they faced position of rising stars. In the condition of rising stars, those countries were able to take advantage of the opportunity to increase market share. Another condition was faced by the other six coffee exporting countries which experienced decreasing RCA. During the last period, coffee market share in Brazil and Indonesia increased lower than the increase in the world market share. However, in this condition, Brazil and Indonesia were suffered from the decline of market share. When the world market share increased, Brazil and Indonesia thus experienced lost opportunity. A similar thing was also found in Colombia and Uganda which confronted lost opportunity, while Vietnam and Peru faced lagging opportunity.

The condition which changed quite significantly occurred in India during period 5 (2012-2015). In that period, India faced leading retreat in which there was declining RCA that was reflected by the situation where

the decrease of Indian coffee share was lower than that of in the world coffee share. This finding was diverse from the previous period where India experienced rising stars of the increase in coffee export value as much as 136.5 percent during the period 2009-2012. However, this country was suffered from decreasing export coffee with the value of 12.26 percent during the period 2012-2015. This situation led to quite significant change in position of India in the coffee market. In general, other coffee exporting countries such as Brazil, Vietnam, Colombia, Indonesia, Ethiopia, Uganda, Guatemala, and Peru faced increasing RCA from the previous period.

Primarily, Indonesia experienced a change of position in the period 2000-2015 by facing the world coffee market competition. Indonesian coffee in the international market experienced the best period (rising stars) during 2003-2006.

This is indicated by the increasing market share of Indonesian coffee which exceeds the increase of the world market share. Indonesia was able to compete with Vietnam and Guatemala in that period which were equally positioned as rising stars.

Indonesia was also able to open new export markets such as in East Asia. In the fourth period (2009-2012), Indonesia experienced a considerable decline in market share. This is due to the decline of Indonesian coffee exports by 12.36 percent. On the other hand, during that period Indonesian coffee production increased by 7.62 percent. The decline of the Indonesian coffee exports was due to the increase in domestic consumption. The Indonesian government set a target of increasing coffee exports by 24.3 percent by 2025 (Ministry of Agriculture 2015). Efforts to achieve these targets can be done through increasing productivity such as the use of technology, superior seeds suitable with agro climate of each production center, plant pruning, and treatment improvement of harvested coffee beans.

## **CONCLUSION AND POLICY RECOMMENDATION**

A shift in competitiveness can affect the change in export market position of a country. The ten world coffee producing countries have a comparative advantage that is shown by the value of RCA greater than one. The greater the market share a

country has, the higher of competitiveness of the country compared to other countries. In line with the increasing level of world coffee trade competition, the targeting of coffee export by the Indonesian government began to be directed to market orientation rather than production orientation. This is done through some efforts to increase productivity through the implementation of technology and superior seed which is appropriate to agro climate of each production center area in each country. It is also essential to perform coffee plant pruning in some countries that have old coffee plant to increase the production and encourage the export. It is necessary to improve the quality of coffee export through the treatment improvement of harvested coffee beans. A country can increase export market share in new destination countries which have a potential market.

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