

The Analysis of Competitiveness and Export Demand of Acehese Coffee in the International Market

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Abstract

Coffee is one of commodities that have been widely traded all over the world. Most of the coffee commodity traded in the international market is Arabica coffee, and it is only a small portion of them are Robusta coffee. Aceh region that located in the most western part of Indonesia, produces most types of Arabica, only a small part of Robusta. Nationally, on the other hand, Indonesia produces most kinds of Robusta, only small parts of Arabica. This study aims to: (1) identify the competitiveness of the coffee commodity from Aceh region in the international market, (2) analyse the effects of the competitiveness on the change of export level, and (3) analyse the factors that affect the demand for the exports of coffee in the international market. The research employs qualitative method with a secondary data of time series over a span of 22 years from 1990 to 2012. The model used are Revealed Comparative Advantage Model (RCA), Constant Market Share Model (CMS), Adjustment Partial Model/PAM. The results of the analysis of the factors that influence the demand for the exports of Acehese coffee in the international market, using the model of partial adjustment models (PAM) with a lag of one year exports showed, both in the short and long period of time, all the variables included in the model estimates the demand function of exports significantly affect the demand for exports. Individually, variable lag of exports, world coffee exports, world coffee prices, exchange rates and consumption stock of importing countries are positively and significantly effects the export demand, while the variable of stock of world coffee exports and revenues of importing countries has a negative and not significant effect. Whereas the variable price of the world has a significant negative effect on the demand for commodity exports of Acehese coffee in the international market.

Keywords: Competitiveness, Change in Exports, Exports Demand, International Market

1. INTRODUCTION

Coffee is one of the primary commodities that are widely commercial in the world nowadays. Coffee became an important commodity in global trading because almost all countries in the world are involved in coffee trading in the international market. Most developed countries are involved as consumers, while developing countries are involved as producers.

At this time, Indonesia ranked fourth of the biggest countries of coffee producers in the world after Brazil, Vietnam and Colombia. Until the year of 2011 the total area of plantations in Indonesia reached 1.308 million hectares with a total production of 709 000 ton per year. The total coffee plantations covers an area of 1,254,921 ha (95.94%), which is a type of smallholder plantations mostly located in Sumatra, Java, Kalimantan, Sulawesi, East Nusa Tenggara, West Nusa Tenggara and Bali; the remaining area of 23 167 ha (1.77%), on the other hand, is a type of state large plantations and 29 912 ha (2.29%) of which owned by are private sector (Directorate General of Plantation, the Ministry of Agriculture of Indonesia).

As for Indonesia, coffee has become one pillar of export commodity as well as several other commodities such as clove, tobacco, tea, cocoa, rubber and palm oil. Mubyarto (1991) stated that since 1986 coffee has become an important commodity in the export of agricultural products. Coffee traded on the international market has larger amount than oil, just export value obtained is smaller than the oil (Coffee Indonesia, 2004). Nevertheless, the role of the coffee commodity for Indonesian economy is still quite large and important, both as a source of income for farmers as well as a provider of jobs for the population through the production, processing and marketing as well as a source of income for the country. McStoker (1987) revealed that coffee commodity for Indonesia is a promising source of foreign exchange.

From the total production of coffee produced by the countries coffee producers around the world, the vast majority (about 70%) is Arabica, the rest (about 30%) is Robusta. While coffee production in Indonesia, based on the average production per year over the period 2001-2010 showed 87% of coffee production is dominated by robusta, the remaining 13% is Arabica. Aceh region as one of the coffee production areas in Indonesia, based on the average production during the period 2006-2010 shows that 64% of its production is Arabica, the remaining which is 36% is robusta (Directorate General of Plantation the Ministry of Agriculture Indonesia). Based on the facts of production, then Aceh coffee commodity is indicated to have relative competitiveness in the international market.

Currently there are six countries determined as the world's largest coffee producer's i.e. Brazil, Colombia, Vietnam, Indonesia, Mexico, and India. Meanwhile, Indonesia, until 1998 is still the third largest coffee producer in the world. However, after 1998 the position of Indonesia dropped in rank four displaced by

Vietnam. Even Vietnam is currently the world's largest country coffee producer of Robusta.

The advancement of coffee production in the world's over the period of 1990-2010 revealed that the production of Brazil, Vietnam, Indonesia, Mexico and India experiencing positive growth, while Colombia experienced negative growth. In a period of 21 years the average production per year were achieved by each country is Brazil 2,026,918 tons, Colombia 703.739 tons, Vietnam 615.934 tons, Indonesia 444.001 tons, Mexico 273.425 tons and India 251.252 tons. The trend advancement of world coffee production indicated fluctuated and tended to increase with the growth rate reaching 1.84% per year. An increase in production that occurred during the year 1990-2010, beside a decline in production at some period in the time range is along with the increased production of Brazil and Vietnam that occurred significantly.

The Increased production of Brazil and Vietnam, has led to a surge in exports of coffee in the international market. The trend advancement of world coffee exports during the period 1990-2010 indicated a fluctuating situation and tend to increase with growth of 1.01% per year. In the advancement of the export share, Indonesia experienced a negative growth of -1.14% per year, Colombia -2.80%, Mexico -1.92% and other countries -0.86% per year. While Brazil, Vietnam, and India experienced a positive growth respectively by 3.40%, 13.43% and 4.28%.

The rapid growth of the world's coffee production has caused the share of coffee in international markets increased to exceed the needs of the world's consumption. Over supply of coffee is occurring in the international market has caused the world coffee crisis considered by the advancement of fluctuating coffee prices and trended downward.

Aceh province, as one of the producers of coffee in the country, with a production center in Aceh Tengah and Bener Meriah, does not escape from the impact of the world coffee crisis. The crisis triggered by the oversupply of coffee in the international market, that led to the collapse of coffee prices on the world market to attain at the farm level, has provided adverse implications for the advancement of the coffee in both of coffee production center in Aceh.

Based on data from the coffee plant area at the Directorate General of Plantation Department of Agriculture of Indonesia, in 2000 Aceh was ranked fourth of coffee producer regions in Indonesia after South Sumatra which covers a total area (20.87%) of the total coffee crop in Indonesia, Lampung (16, 15%) and East Java (8.33%). Plant area of coffee plantations in Aceh inclusively 101.186 ha (approximately 8.03%) of the plant area of coffee plantations in Indonesia. In the period 2000-2006, the development of acreage and production quantities of Aceh coffee showed a decline in acreage by (-9.24%) per year and decreased production by (-2.39%) per year. Declining performance of Aceh coffee in the period which are caused due to the world coffee crisis. In the period 2007-2011, the performance of the Aceh coffee began to show better conditions than the previous period. Acre age and production continued to increase with the growth of 3.34% and 2.26% per year.

The fact of the coffee world crisis conditions as stated above, as a result of coffee over supply in the international market of which confirmed by increasingly fierce competition among the major countries coffee producers in the world. Similarly, the condition of Aceh coffee shows with a tendency of low growth production of which show a very low by 2.16% per year and it occurs at the same timen with the world coffee crisis, indicating the Aceh coffee commodity still has relative low competitiveness in the international market.

2. PREVIOUS STUDIES

Rohayati Suprihatini (2005), conducted a research on Export Competitiveness of Indonesian coffee in the World Coffee Market. Using the model of Constant Market Share (CMS) and using the data of 1997 to 2001, concluded that Indonesian coffee export growth is far below the growth of world coffee exports, even experienced a negative trend. The condition is caused by: (1) the composition of coffee products are exported less follow the needs of the market, reflected in the number of commodity composition negative (-0.032); (2) The countries destinations of export of Indonesian coffee less devoted to the coffee importing countries that have a high import growth, reflected in the number of negative market distribution (-0.045); and (3) the competitiveness of Indonesian coffee in the world coffee market is quite weak, reflected in the negative figures of competition factor (-0.211).

Djaja (1992), conducted a research on Indonesian forest product export growth. Using the model of Constant Market Share (CMS), accomplishing that export growth increased dramatically in the period 1970-1989 is a positive contribution of world trading and competitive effects. While the commodity composition effects contributed negatively to the change of export.

Suryono (1991), analyzing the Indonesian coffee trade in the domestic market and the international market, is done by using an econometric model. The study concluded that Indonesia's coffee exports was more influenced by the factors of the economy compared with the non-economic factors.

Simatupang et.al, (1998), using the Generalized Armington Trade Model to evaluate the prospects of global demand for Indonesian coffee using data from 1973 to 1995. Estimation results reveal an increase in total imports of coffee in the United States and Japan have a positive influence on the exports of arabica and robusta

coffee of Indonesia. While the increase in total imports of coffee in Germany has negative effect on exports of arabica coffee from Indonesia.

Lamo (2005), conducted a research on Export Performance Analysis of Agricultural Sector and Industrial Sector that have a comparative advantage and its role in GDP in the province of South Sulawesi. One of the analysis is effect of the export price and income of importing countries on export quantity of South Sulawesi. In conclusion the export price positively influence on the increase in the quantity of exports, while higher income of importing countries negatively affect the quantity of exports.

ME Perseveranda (2005), conduct a research on the export demand of East Nusa Tenggara coffee to Japan. Lowering the international cocoa price variable (variable substitution), Japan's GDP, the exchange rate and the Japanese coffee consumption. By using ECM and PAM analysis, the result indicated that in the short term, the price elasticity of demand is inelastic, while in the long-term the price elasticity of demand is elastic. World prices variable is negatively affect export demand. Short-term impact is not significant, but in the long term significantly. In the long term world pricevariable of Arabica coffee positively effect on export demand, but not significant. In the short term, foreign exchange variable RP / US \$ is positive but not significant effect on export demand, in the long run have a negative and significant impact. Japan's GNP per capita variable has a positive and significant impact on exports in the short term, while in the long term the impact is negative and not significant. Japanese coffee consumption variable in both short term and long term positively effect on export demand for coffee but not significant.

Meanwhile, a research conducted by Dewi Anggraini (2006), about the factors that affect demand exports for Indonesian coffee from the United States. Using the model of multiple linear regression equation with a least squares method (Ordinary Least Square = OLS), the result indicates that world coffee price variable, world coffee price, the population of the United States and previous year coffee consumption variable (lag) significantly affect the exports demand of Indonesian `coffee. While the income per capita of the population and currency exchange rate variable are not significant. World coffee prices have negative effect and significant on export demand, while the other variables have a positive effect.

Santosa (1999), in his research on Comparative Advantage Analysis of Commodities Tobacco Export na-Oogst and Voor-Oogst Jember Regency period of 1991 to 1997, concluded that the Voor-Oogst tobacco in the period 1991 to 1997 has a comparative advantage. This can be seen from the RCA value greater than 1 (one) that means that the share of tobacco Voor-Oogst in Jember total exports is greater than the average share of Voor-Oogst of Indonesia. It means that Jember area has reelevately more specialized in Voor-Oogst tobacco commodity group compared to that of the other regions in Indonesia.

Research by Chen and Duan (1999) using Analysis of Constant Market Share (CMS) show; between 1987-1997, Canada and its main competitor countries can boost processed food exports to Asia due to the growth of processed food imports in Asian countries relatively quick.

3. RESEARCH METHODOLOGY

This research was conducted to analyze the competitiveness of the Aceh coffee commodity and the factors affecting exports demand for Aceh's coffee in the international market. The data used is secondary data published and unpublished obtained from various sources. The data used is the world's and Aceh coffee production, the world and Aceh coffee exports, the world's consumption of coffee, the world stock consumption, the stocks of coffee exports which at times can be exported immediately (Gross Opening Stock), world coffee prices, the price of tea in the world market, the RP exchange rate against the US \$ (exchange rate), and the income of importing countries in the world. The data are analyzed for time series over a span of 22 years from 1990 to 2012. The analysis tools used to explain the intent and purpose of the study consist of:

(1). *Revealed Comparative Advantage Model (RCA)*

RCA models, are used to determine the position of Aceh coffee commodity competitiveness in the international market. RCA models based on the concept i.e. trading between regions / countries show comparative advantages owned by region / country. The measured variable is the export performance of a product to the total exports of the region / country which is then compared with the share of products in world trading. RCA is used to calculate the value of the following equation:

$$C = \frac{X_{ij} / \sum_i X_{ij}}{\sum_{j_i} X_{ij} / \sum \sum X_{ij}} \quad (1)$$

C = The value of RCA; X_{ij} = exports of the commodity i in the country j; $\sum_j X_{ij}$ = total exports of the country j; $\sum X_{ij}$ = total world exports of commodity i; $\sum \sum X_{ij}$ = total world exports. If the RCA value greater than 1, then the commodity has a comparative advantage and has strong competitiveness, and there will be vice versa if the RCA is less than 1.

(2). Constan Market Share Model(CMS)

CMS model, used to determine the competitiveness as well as to see the determinants of export changes. This research perform decomposition of changes in the volume of exports to the CMS model as done by Chen and Duan (1999), with the formulation as follows:

$$\Delta q = S^1 \Delta Q + \left(\sum_i^n \sum_j^m S_{ij}^1 \Delta Q_{ij} - \sum_i^n S_i^1 \Delta Q_i \right) + \left(\sum_i^n \sum_j^m S_{ij}^1 \Delta Q_{ij} - \sum_j^m S_j^1 \Delta Q_j \right) + \sum_i^n \sum_j^m Q_{ij}^0 \Delta S_{ij} \dots \dots \dots (2)$$

Meaning of symbols:

- q = total coffee export of the country
- S1 = coffee export share of total world exports
- Si = share export of coffee commodities ifrom export coffe commodity I of the world
- Sij = share of the commodity exports of coffee i of total commodity exports of coffee i the country j
- Q = total world coffee exports
- Qi = total exports of coffeecommodity i in the world
- Qij = total commodity exports of coffee i to the country j
- Δ = change in two periods (0 = initial years; 1 = end-year)
- (1) = the effect of export growth in the world,
- (2) = the effect of market distribution,
- (3) = effect of commodity composition and
- (4) = the competitiveness effect.

The period of analysis used in the implementation of CMS model in this study was 10 years, was made into five sub-periods: 2001-2002; 2003-2004; 2005-2006; 2007-2008 and 2009-2010.

(3). Adjustment Partial Model/PAM

The Equation of the export demand functions of Aceh coffee are analyzed as follows:

Qdt = f(EKD, GOS, HKD, HTD, KURS, PNP, SKNP, Qdt-1).....(3)

Equation (3) describes the exports demand of Aceh coffee is a function of the world coffee export (EKD), the stock of world coffee export (gross opening stock / GOS), world coffee prices (HKD), the world price of tea (HTD), the rupiah exchange rate against the US dollar (RATE), income of importing countries (PNP), stock consumption of importing countries (SKNP) and Aceh coffee export previous year / Lag export (EKA-1 / Qdt-1).

To estimate the demand forAceh coffee exports based on equation demand functions will be analyzed using PAM models. PAM models known as Stock Adjustment Model, that is a form of rationalization Koyck models developed by Mark Nerlove in 1958. The model is used to estimate the relationship Koyck dependent variable with independent variables that assists variable inaction or lag (Gujarati, 1995).

PAM models in its application using the assumption that the dependent variable would be expected in a certain period can not be observed directly. Therefore for these variables hypothezied in the form of a partial adjustment. The value of Partial adjustment expected between 0 and 1 (0 <λ <1). Under the provisions of the export demand function equation (3) can be written as follows:

Qdt* = f(EKD, GOS, HKD, HTD, KURS, PNP, SKNP).....(4)

Explicitly function of export demand equation (4) can be written as follows:

Qdt* = a0 + b1EKD + b2GOS + b3HKD + b4HTD + b5KURS + b6PNP + b7SKNP + ε(5)

Therefore Qd* can not be observed directly, then used a partial adjustment in the form of equation as follows:

Qdt - Qdt-1 = λ (Qdt* - Qdt-1)
 Qdt - Qdt-1 = λQdt* - λQdt-1
 Qdt = λQdt* + (1-λ)Qdt-1 (6)

Qdt-Qdt-1 is the actual change occurs, while Qd* -Qdt-1 is a change in that desired or expected. Therefore, the expected changes can not be directly observed, it is hypothesized with the value of partial adjustment between 0 and 1 (0 <λ <1). Equation (6) postulated that changes in actual demand (Qdt-Qdt-1) within a certain time period is a fraction λ of the desired changes for the period. If λ = 1 means that the desired change is equal to the actual changes. If λ = 0, meaning no change request or Qdt = Qdt-1. Adjustment coefficient is expected to be between two extreme values i.e (0 <λ <1). Furthermore, equation (5) is substituted into the equation (6), thus the equation (7) as follows:

$$Qdt = \lambda(a_0 + b_1EKD + b_2GOS + b_3HKD + b_4HTD + b_5KURS + b_6PNP + b_7SKNP + \epsilon) + (1-\lambda)Qdt-1$$

$$Qdt = \lambda a_0 + \lambda b_1EKD + \lambda b_2GOS + \lambda b_3HKD + \lambda b_4HTD + \lambda b_5KURS + \lambda b_6PNP + \lambda b_7SKNP + \lambda \epsilon + (1-\lambda)Qdt-1 \dots \dots \dots (7)$$

Equation (7) is the equation used to estimate the export demand of Aceh coffee in the international market. To facilitate the estimation process, equation (7) simplified to:

$$Qdt = \delta_0 + \delta_1EKD + \delta_2GOS + \delta_3HKD + \delta_4HTD + \delta_5KURS + \delta_6PNP + \delta_7SKNP + \delta_8Qdt-1 + \epsilon \dots \dots \dots (8)$$

- Where :
- $\delta_0 = \lambda a_0$
 - $\delta_1 = \lambda b_1$
 - $\delta_2 = \lambda b_2$
 - $\delta_3 = \lambda b_3$
 - $\delta_4 = \lambda b_4$
 - $\delta_5 = \lambda b_5$
 - $\delta_6 = \lambda b_6$
 - $\delta_7 = \lambda b_7$
 - $\delta_8 = (1-\lambda)$

4. RESULTS AND DISCUSSIONS

4.1 Competitiveness Analysis

The Results of the export relative competitiveness analysis of Arabica coffee commodities in international markets between Aceh along with six other countries considered as the competing countries are shown in Table 1. In the period 2001-2010 Aceh coffee has shown strong competitiveness, this is marked by RCA value greater than one ($RCA > 1$) while Brazil as the biggest country's producer and exporter of coffee in the world and Guatemala as one of the countries in the world that produce and export arabica coffee in the proportion greater than robusta also has value $RCA > 1$. Meanwhile, four other countries can be seen on Table 1 as follows:

Table 1. The RCA Value of Arabica Coffee Commodities of Aceh and its Competitors.

Year	Indonesia	Brazil	Guatemala	India	Congo	Tanzania	Aceh
2001	0,263	1,164	1,199	0,646	0,542	0,993	1,157
2002	0,300	4,361	1,255	2,677	0,680	1,015	1,253
2003	0,191	1,164	1,267	0,546	0,623	0,910	1,269
2004	0,296	1,145	1,162	0,610	0,608	1,028	1,160
2005	0,266	1,163	1,192	0,593	0,727	0,970	1,183
2006	0,339	1,170	1,212	0,477	0,790	0,879	1,189
2007	0,263	1,177	1,251	0,528	0,593	0,942	1,256
2008	0,224	1,212	1,294	0,528	0,595	0,961	1,299
2009	0,242	1,183	1,241	0,603	0,669	0,991	1,245
2010	0,355	1,114	1,159	1,328	0,680	0,960	1,162
Rata2/thn	0,274	1,485	1,223	0,854	0,651	0,965	1,217

Competitiveness Criteria : $RCA > 1$ strong competitiveness ;
 $RCA < 1$ low competitiveness

India, Congo, Tanzania and Indonesia have low competitiveness, indicated by RCA value less than 1 ($RCA < 1$), and even the export competitiveness of Indonesia Arabica coffee commodities in the international market was the weakest of the other countries. The Relative exports competitiveness of Aceh robusta coffee commodity and six other countries as a competitor, which reflected in the value of RCA (Table 2), shows the exports of Indonesia robusta coffee commodity has very high competitiveness even much better compared to the competitiveness of the other five countries and Aceh. Based on the value of the RCA annual average, the ranking of exports competitiveness of robusta, the largest is Indonesia's with RCA value of 4.30, India 2.89, Congo 2.83, Tanzania 1.15, a Brazil 0.27, Guatemala 0.016, and Aceh 0,045.

Table 2. The RCA Value of Robusta Coffee Commodities of Aceh and its Competitors.

Year	Indonesia	Brazil	Guatemala	India	Congo	Tanzania	Aceh
2001	4,650	0,189	0,016	2,753	3,268	1,036	0,221
2002	3,722	0,526	0,010	2,210	2,243	0,941	0,017
2003	3,998	0,393	0,011	2,682	2,396	1,335	0,002
2004	5,272	0,119	0,020	3,365	3,381	0,832	0,029
2005	4,786	0,161	0,012	3,100	4,785	1,156	0,057
2006	4,054	0,216	0,019	3,418	1,972	1,558	0,128
2007	3,878	0,310	0,019	2,844	2,588	1,225	0,000
2008	3,595	0,290	0,018	2,580	2,354	1,132	0,000
2009	4,094	0,251	0,015	2,620	2,352	1,037	0,000
2010	4,978	0,294	0,018	3,345	2,972	1,249	0,000
Rata/thn	4,303	0,275	0,016	2,892	2,831	1,150	0,045

Competitiveness Criteria : $RCA > 1$ strong competitiveness ; $RCA < 1$ low competitiveness

4.2. Analysis of Changes in Export

4.2.1. The Changes of the period 2001-2002

Changes in export for the period 2001-2002 of Aceh and competing countries are presented in Table 3. In the period 2001-2002, Brazil, India, Tanzania and Aceh experienced increasing export change, while Indonesia, Guatemala and Congo experienced declining export change, the declining of Indonesia's exports (14.185 tonnes), Guatemala (37.720 tonnes) and Congo (533 tons), related to the effects of markets distribution amounted to 173.54% and competitiveness effect amounted to 138.83% for Indonesia, while for Guatemala related to the effects of the commodity composition amounted to 18.16% and the competitiveness effect by 136.40%.

Table 3. Changes in Export of Producer Countries: Arabica and Robusta coffee, Year 2001-2002

Countries	Change of Export		The Effects of							
			World export growth		Commodity Composition		Market Distribution		Competitiveness	
	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)
Aceh	134.958,07	100	681,32	0,50	-351,55	-0,26	928,82	0,69	133.699,49	99,07
Indonesia	-14.185,00	100	15.490,05	-109,20	14.633,85	-103,16	-24.616,31	173,54	-19.692,59	138,83
Brazil	219.568,00	100	105.581,42	48,09	-24.552,53	-11,18	4.839,62	2,20	133.699,49	60,89
India	4.916,18	100	10.230,19	208,09	4.986,94	101,44	-2.364,84	-48,10	-7.936,11	-161,43
Guatemala	-37.720,00	100	13.173,55	-34,92	-6.851,83	18,16	7.408,38	-19,64	-51.450,09	136,40
Tanzania	6.904,00	100	1.871,89	27,11	-51,03	-0,74	14.796,04	214,31	-9.712,90	-140,69
Congo	-533,00	100	676,22	-126,87	337,31	-63,29	-691,78	129,79	-854,75	160,37

For Congo, contribution to the market distribution effects amounted to 129.79% and competitiveness amounted to 160.37%.

Three competing countries, Brazil, India and Tanzania experienced increased export changes. Increased exports of Brazil (219 568 tonnes) related to the effect of the growth of world exports amounted to 48.09%, the competitiveness effect by 60.89% and the effect of market distribution by 2.20%. Increased exports of India (4916.18 tonnes) is the contribution of the growth in world exports amounted to 208.09% and commodity composition effects as 101.44%. Changes in Tanzanian exports increase (6904 tons) associated with the effect of markets distribution amounted to 214.31% and the effects growth in world exports amounted 27.11%. For Aceh region increased export changes (134,958.07 tonnes) in the period 2001-2002 is the competitiveness effect of 99.07%, 0.69% market distribution effect and the effect of world export growth of 0.50%.

4.2.2. The Changes of the period 2003-2004

The changes of export in the period of 2003-2004 (Table 4), shows all the exporting country competitor also Aceh experienced declining export changes, except for Indonesia that the only country that experienced increase change. Changes in Aceh exports decreased by 45805.06 tons an accumulation of the effects of the competitiveness of 99.44% and the effect of the commodity composition of 1.68%, whereas the effects of the growth of world exports and distribution markets contributed positively respectively by 0.78% and 0.33%. As shown on table 4 below, changes in Brazilian exports decreased by 7822 ton are related to market distribution effects as 1.135,82 % and competitiveness effect as 582,29%,

Table 4.Changes in Export of Producer Countries: Arabica and Robusta coffee, Year 2003-2004

Countries	Export Change		The Effect of							
			World Export Growth		Commodity Composition		Market Distribution		Competitiveness	
	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)
Aceh	-45.805,06	100	152,70	-0,33	-768,00	1,68	357,11	-0,78	-45.546,88	99,44
Indonesia	32.503,00	100	7.340,21	22,58	-54.165,15	-166,65	13.544,06	41,67	65.783,88	202,39
Brazil	-7.822,00	100	36.366,50	-464,93	90.202,07	-1.153,18	-88.843,69	1.135,82	-45.546,88	582,29
India	-1.443,68	100	3.817,03	-264,40	-18.194,81	1.260,31	9.117,11	-631,52	3.817,00	-264,39
Guatemala	-15.206,00	100	4.545,50	-29,89	12.700,98	-83,53	-19.395,65	127,55	-13.056,83	85,87
Tanzania	-12.176,95	100	759,28	-6,24	329,85	-2,71	-5.255,89	43,16	-8.010,19	65,78
Congo	-479,00	100	346,91	-72,42	-1.662,53	347,08	1.116,92	-233,18	-280,30	58,52

While the effect of world exports growth, and commodity composition effects still give a positive contribution. Changes in India's exports decreased by 1443.68 tons only related to the effects of the commodity composition of 1260.31%, while the growth of world exports, markets distribution and competitiveness provide a positive contribution respectively by 264.40%, 631.52% and 264.39%. The declining of Guatemala exports amounted to 15.206 tonnes and Tanzania 12.176,95tonnes equally related to themarkets distribution effects and the competitiveness effect. for Congo those two effects provide a positive contribution to changes in its exports. Indonesia increased export change is related to the growth of world exports amounted to 22.58%, the effect of competitiveness and market distribution respectively by 41.67% and 201.39%.

4.2.3. The Changes of the Period of 2005-2006

The export changes of competitor countries and Aceh alone in 2005-2006 (Table 5) shows that Indonesia, Brazil and India has a significant increase in export, while Guatemala, Tanzania and Congo amended declining exports. As swown on table 5, distribution markets and competitiveness factors provide a positive contribution to the increase in exports of Indonesia respectively by 339.99% and 270.04%, while the world exports growth and commodity composition gives a negative contribution to the change in exports of Indonesia respectively by 53.92% and 456.11%.

Table 5.Changes in Export of Producer Countries: Arabica and Robusta coffee, Year 2005-2006

Countries	Export Change		Effect of							
			World Export Growth		Commodity Composition		Market Distribution		Competitiveness	
	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)
Aceh	2.890,00	100	-68,02	-2,35	219,58	7,60	-190,76	-6,60	2.929,20	101,36
Indonesia	5.539,00	100	-2.986,78	-53,92	-25.263,75	-456,11	18.832,17	339,99	14.957,36	270,04
Brazil	84.288,99	100	-15.827,44	-16,76	45.587,83	54,09	9.399,65	11,15	45.128,96	53,54
India	9.557,00	100	-1.676,78	-17,55	-11.705,65	-122,48	7.624,86	79,78	15.314,57	160,24
Guatemala	-5.923,00	100	-1.916,11	32,35	7.027,11	-118,64	2.199,60	-37,14	-13.233,60	223,43
Tanzania	-15.878,00	100	-423,20	2,67	-778,73	4,90	-4.923,43	31,01	-9.752,64	61,42
Kongo	-65,00	100	-79,89	122,91	-248,20	381,84	154,94	-238,37	108,15	-166,38

For Brazil incremental change is the contribution of commodity composition as 7.60% and the competitiveness of 101.36%, while the world exportsgrowth andmarket distribution give negative effects respectively by 2.35% and 6.60%. Changes increased export case for India is associated with the market distribution and the competitiveness effects respectively 79.78% and 160.24%. Changes in exports decreased in Guatemala, Tanzania and Congo is occurring as the effect of world exports growth respectively Guatemala (32.35%), Tanzania (2.67%) and Congo (122.91%). The effect of exports change applies only to the commodity composition is in Tanzania and Congo respectively by 4.90% and 381.84%, for Guatemala these two factors do not give effect to changes in exports. The effects of market distribution (31.01%) applies to Tanzania and do not apply to Guatemala and Congo. The competitiveness effect applies to Guatemala (223.43%) and Tanzania (61.42%).

The increase of export changes in Aceh region is related to the effects of the commodity composition of 7.60% and the competitiveness amounted to 101.36%, while world export growth the give a negative effect on the change of exports amounted to 2.35% as well as the market distribution factors also give a negative effect on the growth of exports amounted to 6.60%.

4.2.4. The Changes of the period 2007-2008

Changes of export in the period of 2007-2009 are presented in Table 6. In the period 2007-2008, Indonesia, Brazil, Guatemala and Aceh has increased export. The World export growth factors provide a positive effect on the change in the export of all exporting country competitors and Aceh. As shown on the following table 6, commodity composition contributes negatively to the change in Brazil's exports amounted to 2245.59% and Guatemala amounted to 57.89%.

Table 6: Changes in Export of Producer Countries: Arabica and Robusta coffee, Year 2007-2008

Country/ Province*	Change of Export		Effect of							
			The Growth of World Export		Composition of Commodity		Market Distribution		Competitiveness	
	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)
Aceh*	2.794	100	513,87	18,39	-177,02	-6,34	-95,94	-3,43	2.553,09	91,38
Indonesia	30.581	100	23.285,53	76,14	17.646,38	57,70	-31.117,83	-101,76	20.766,92	67,91
Brazil	5.259	100	122.315,38	2.325,83	-118.095,39	-2.245,59	12.400,70	235,80	-11.361,68	-216,04
India	-502	100	13.512,88	-2.691,81	6.513,60	-1.297,53	-18.370,84	3.659,53	-2.157,64	429,81
Guatemala	9.144	100	15.660,93	171,27	-5.293,76	-57,89	-7.710,97	-84,33	6.487,79	70,95
Tanzania	-15.139	100	3.390,95	-22,40	145,65	-0,96	-5.102,50	33,70	-13.573,10	89,66
Kongo	-416	100	842,42	-202,50	351,65	-84,53	-969,31	233,01	-640,75	154,03

Commodity composition factor also have a negative effect on the changes in Aceh exports but its contribution is relatively small (6.34%). The Effects of commodities composition provide positive change for Indonesia (57.70%), India (1297.53%), Tanzania 0.95% and Congo 84.53%. Market distribution factors contributed negatively to the change in the export of all countries and regions of Aceh, except Brazil that provide a relatively large effect (3659.53%) of the increase in exports. For Aceh, market distribution effect accounted for 3.43% of the decline in exports. Competitiveness factors contributing to a negative change in exports occurred in the Brazilian states of 216.04%, Tanzania 426.81% and India 89.66%, on the contrary contribute positively on Indonesia 67.91%, and Guatemala 70.95%. The effect on the export competitiveness of the region of Aceh contribute 91.38%

4.2.5. The Changes of the period 2009-2010

The Changes of export in the period of 2009-2010 are presented in Table 7. In the period export changes increased in Brazil, India and the Congo, while in Indonesia, Guatemala, Tanzania and Aceh exports changes falling. Factors that contribute either positively or negatively to the change in exports in each competitor are very varied of which can be seen on table 7 as follows:

Table 7.Changes in Export of Producer Countries: Arabica and Robusta coffee, Year 2009-2010

Country/ Province*	Change of Export		Effect of							
			The Growth of World Export		Composition of Commodity		Market Distribution		Competitiveness	
	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)	(ton)	(%)
Aceh	21,00	100	-41,59	-198,03	435,09	2.071,47	57,58	274,16	-430,07	-2.047,59
Indonesia	-38.370,00	100	-1.754,51	4,57	-42.558,88	110,92	30.730,24	-80,09	-24.786,86	64,60
Brazil	85.306,00	100	-10.807,14	-12,67	76.535,75	89,72	-34.995,26	-41,02	54.572,65	63,97
India	8.819,99	100	0,00	0,00	-19.252,62	-218,28	18.976,87	215,16	9.095,74	103,13
Guatemala	-15.750,99	100	-1.134,79	7,20	11.630,80	-73,84	371,57	-2,36	-26.618,57	169,00
Tanzania	-12.751,98	100	-10.807,14	84,75	10.214,76	-80,10	664,56	-5,21	-12.824,17	100,57
Kongo	615,00	100	-53,05	-8,63	-766,82	-124,69	706,51	114,88	728,35	118,43

The effects of world exports growth contributed negatively to the change of Indonesia's exports amounted to 4.57%, Brazil 12.67%, Guatemala 7.20%, Tanzania 84.75% and Congo 8.63%, while no positive or negative effect on the changes in India's exports. On the export changes in world exports growth provide negative effect of 198.03%. Commodity composition factors contribute positively to the changes in Brazilian exports amounted to 89.72%, Guatemala 73.84%, Tanzania 80.10%, and Aceh 2071.47%, while giving a negative contribution to the change in Indonesia's exports amounted to 110.92%, India 218.28%, and the Congo 124.69%.

Overall market distribution factors contribute positively to changes in exports of all countries, except Brazil. market distribution factors contributed negatively. Competitiveness factors contribute positively to changes in competitor countries' exports and contributes negatively to changes in the Aceh regional exports.

4.3. Analysis of Export Demand

The export demand analysis of Aceh coffee presented in this study is to obtain estimation equation of demand function for Aceh coffee on the international market.

4.3.1. Short-Term Demand Estimation

The Estimation of short-term export demand function of the Aceh coffee in the international market, using a partial adjustment model, with a lag of one year exports that were analyzed using Eviews 7.0 empirically shown in the table below.

Table 8. Estimation of Export Demand Function of Aceh Coffee in the International Market

Variable	Estimation Coefficient	T-Statistic	Prob. Value
D_LEKA(-1)	0,508155	6,186971	0,0008
D_EKD	0,000431	3,473065	0,0133
D_GOS	-0,000105	-1,441685	0,1995
D_HKD	0,245771	8,089404	0,0002
D_HTD	-0,476526	-2,365354	0,0559
D_KURS	0,400077	3,073903	0,0218
D_PNP(2)	-0,042704	-1,922884	0,1029
SKNP	0,000433	6,557950	0,0006
C	-435,1173	-7,805090	0,0002
R ²	0,984201		
F-Statistic	46,72236		

The regression equation can be written as follows:

$$DEKA = -435,1173 + 0,508155 DLEKA(-1) + 0,000431 DEKD - 0,000105 DGOS +$$

(55,74790) (0,082133) (0,000124) (7,26E-05)

$$0,245771 DHKD - 0,476526 DHTD + 0,400077 DKURS - 0,042704 DPNP(2) +$$

(0,030308) (0,201461) (0,130153) (0,022208)

$$0,000433 SKNP$$

(6,61E-05)

From the above result, export demand function of Aceh coffee in short-term can be explained that Aceh coffee exports to the international market depending on the demand of the international market, characterized by a constant value (negative -435.1173).

The volume of Aceh coffee exports year before (lag export) has positive and significant impact on the volume of coffee exports of Aceh for the next year. T-count value of 6.186971 is greater than t-table value at $\alpha = 5\%$ that is equal to 2.0800. And p-value = 0.0008. Positive effect of the export volume of the previous year on the increasing volumes of export in the next year, is expected to occur because the system of Aceh coffee trading to the international market by foreign importers traders in the international market is still done by the contract system, that always pay attention to the condition of the export volume of the previous year. In the short-term show there is a dependency of Aceh coffee export realization for its *lag*, therefore, needs to be done by the decomposition of coefficient adjustment that will generate long-term estimation model of Aceh coffee exports did not consider his *lag* factor.

The influence of world stock coffee exports on Aceh coffee exports is negative and insignificant. T-count value of -1.441685 smaller than t-table value at $\alpha = 5\%$ as 2.0800. And p-value = 0.1995. In principle, the effect of world coffee stock is an indirect effect means influenced by intermediate variable that is price variable. This condition can be described more specifically as behavior on normal good trading of micro and macro scale, that is when stock increase, then prices will rise decline (when the normal request). Aceh coffee market share increase in the international market is relatively small, so the price is determined by market conditions, so that exports will be reduced.

The Influence of world coffee price on Aceh coffee exports is positive and significant. T-count value of 8.089404 is greater than t-table value at $\alpha = 5\%$ amounted to 2.0800 and p-value of 0.0002. In international trading, the interpretation of the effect of these variables must be viewed simultaneously with the conversion of variables, that is the value of rupiah against the US \$ (exchange rate) applies. If the observed direction of the relationship of these variables to movements in Aceh coffee exports, it can be said that the movement of Aceh coffee exports in accordance with normal good, where at the time of commodity price increases, sales will be enhanced assuming normal demand.

The influence of the world tea prices on Aceh coffee exports is negative and significant. T-count value is -2.365354 greater than t-table value at $5\% \alpha = 2.0800$ and p-value of 0.0559. If viewed, the relationship of world tea prices to movements of Aceh coffee exports is negative, it can be said that in fact the products of coffee and tea are substitutes or interchangeable.

The influence of the exchange rate on Aceh coffee exports is positive and significant T-count value is 3.073903 larger than t-table value at $\alpha = 5\%$ as 2.0800 and p-value of 0.0218. Exchange rate Variable has a very important role in international trading as the conversion of the price of commodities traded in the currency of a country.

Based on the discussion of the effect of price movements on Aceh coffee exports previously, then this condition can be synergized to explain that not only commodity prices led to an increase in exports, but also coupled with the effect of the exchange rate prevailing theory of international trade as normal goods.

The influence of income of the importing country's of Aceh coffee exports is negative and insignificant. T-count value of -1.922884 smaller than t-table value at $\alpha = 5\%$ as 2.0800 and p-value of 0.1029. In principle, the effect of income of importing countries is an important factor in terms of financing a country in international trading, but the negative effect that insignificant of these variables on the movement of Aceh coffee exports suggests those factors outside the model (import contract) from the importing country remains in effect ,

The effect of stock consumption of importing countries to the export of Aceh coffee is positive and significant. T-count value of 6.557950 is greater than t-table value at $\alpha = 5\%$ as 2.0800 and p-value of 0.0006. Based on the positive and significant effect of the stock consumption variable of importing countries to increasing exports of Aceh coffee, it indicates that although stocks consumption of the importing country increased is still accompanied by the export demand of Aceh coffee, but when analyzed, the magnitude coefficient is only 0.000433 tons, then this increase it can be said almost doesn't have meaning. These conditions explain that the exports demand for Aceh coffee also still influenced by factors outside the model that is import contracts of importing countries in international trading.

The Influence of the world coffee exports on Aceh coffee exports is positive and significant. T-count value of 3.473065 is greater than t-table value at $\alpha = 5\%$ at 2.0800, and p-value of 0.0133. This suggests that although the world's coffee exports increase was accompanied by the export demand of Aceh coffee, but when the magnitude of the coefficient is only 0.000431 tons, then this increase can be said almost not useful. These conditions explain that the exports demand for Aceh coffee also still influenced by factors outside the model that is import contracts with importing countries.

4.3.2. Long-term demand estimation

Analysis of the long term export demand function of Aceh coffee, illustrating the relation of each variable (demand of international market), which is an independent variable that incorporated into the specification of the regression model adjusted in Aceh coffee exports its lag period is 1 year. Estimated that long term export demand function of Aceh coffee in the international market by using partial adjustment models, which have been adapted to the adjustment coefficient of $(1 - 0.508155 = 0.491845)$ is as follows:

$$\begin{aligned} \text{DEKA} = & -884,6545 + 0,00087 \text{DEKD} - 0,00022 \text{DGOS} + 0,49846 \text{DHKD} - \\ & (55,74790) \quad (0,000124) \quad (0,0000726) \quad (0,0303081) \\ & 0,96885 \text{DHTD} + 0,81342 \text{DKURS} - 0,08682 \text{DPNP2} + 0,0087 \text{SKNP}. \\ & (0,201461) \quad (0,81342) \quad (0,022208) \quad (0,0000661) \end{aligned}$$

The adjustment coefficient of (0.491845) showed differences of 49.18 percent between desired Aceh coffee exports (potential export) with occurred coffee exports (actual exports) that adjusted within a period of one year.

Based on long-term regression equation, it can be concluded that the (slope) trend of Aceh coffee exports movement in the long-term towards the independent variable trends that influence in the long run is 1,033 $(0.508155 / 0.491845)$ greater than the (slope) trend obtained in the short term. Similarly to the coefficients contained in the long-term regression equation changes more than once compared with the regression coefficients in the short-term equation. Further concluded that, all the variables included in the model estimation of export demand of Aceh coffee in the international market is more influential in the long-term than in the short term.

However, in both the short and long term, the factor of world coffee export, world coffee prices, exchange rates and stock consumption of importing countries alike have a positive influence and significant impact on export demand of Aceh coffee in the international market, while the world stock of coffee, income of importing countries has negative impact and no significant effect on export demand of Aceh coffee in the international market. World coffee prices has negative and significant effect on export demand of Aceh coffee in the international market. If viewed the negative relationship between price and demand of world tea and exports of Aceh coffee in the international market, which occurred within the short term and long-term, it can be concluded that between tea and coffee are not a substitute goods that can replace each other.

5. CONCLUSIONS

The Results of Revealed Comparative Advantage (RCA) shows, the type of Aceh arabica coffee in the international market has a relatively strong competitiveness third after Brazil and Guatemala. In the period of 2001-2010, the competitiveness of Aceh arabica coffee is fluctuated with a relatively small, but tends to increase. This condition is indicated for the type of Arabica coffee has a good market penetration in the international market. The Results of Comparative advantage analysis (RCA) indicates that Aceh robusta coffee in international markets in the period 2001-2010, classified as having a weak level of competitiveness, as Brazil and Guatemala. This condition indicates the type of robusta coffee in Aceh do not have good market penetration in the international market. This is because the area of Aceh is not as robusta coffee producing areas, so exports of robusta coffee become not a major commodity.

The positive changes in the volume of Aceh coffee exports that occurred in the period of 2001-2002, as

the effect of world exports growth, market distribution and competitiveness. This situation indicates a positive change in the export of Aceh coffee due to increase of exports demand for Aceh coffee in the world market, in this case Aceh coffee export are more concentrated to the market or the destination country that has growing faster imports and Aceh coffee have competitiveness in international market.

The negative changes in the volume of Aceh coffee exports that occurred in the period of 2003-2004, constitute the negative effect of commodity composition and competitiveness effect. This situation indicates the Aceh coffee export activity during the period concentrated to coffee products that lower export demand, in this type is robusta and coffee exported don't have competitive value.

The Positive changes in the exports of Aceh coffee that occurred in the period of 2005-2006, as the effect of commodity composition and competitiveness. This condition indicates Aceh coffee exports are concentrated on coffee products which have a high demand in the world market, which is Arabica coffee and coffee products that exported has competitiveness.

The Positive changes of Aceh coffee exports that occurred in the period of 2007-2008, as result of the effect of world exports growth and the competitiveness effect. This situation indicates that the increased exports of Aceh coffee due to the high market demand for international or world imports and exported of coffee products have competitive value.

Positive changes of Aceh coffee exports that occurred in the period 2009-2010, as the effect of commodity composition and markets distribution. This situation indicates that Aceh coffee exports area dominated by coffee products that has high demand in the international market, in this case the Arabica coffee, in addition the ongoing export to countries that has increased import growth.

Analysis of the variables that affect exports demand for Aceh coffee in the international market both in the short term and in the long term, showed lag Aceh coffee export (lag 1 year), world coffee export, world coffee prices, exchange rates and stock consumption of importing countries influence positively and significant on the exports demand of Aceh coffee, while the stock of world coffee exports and income of importing countries indicate negative and no significant impact on the export demand for Aceh coffee. Further, world tea prices have negative and significant effect on the exports demand of Aceh coffee.

Analysis of the variables that affect long-term exports demand for Aceh coffee in international market showed a difference of 49.18 percent between the desired coffee exports (potential export) with exports that occurred (actual export). The fraction of Aceh coffee exports in long term is greater than in short-term.

In relations with the consumption behavior of the international community, between coffee and tea products are not two substitutes that can be interchangeable.

6. POLICY IMPLICATION

The share of Aceh coffee exports in the international market should continue to be improved although in competing with other countries. It is necessary for improving productivity and quality in the framework of improving product competitiveness in the international market.

To avoid negative changes in the exports volume of Aceh coffee, which occurred as the commodity composition effects, then export coffee of Aceh region need to be concentrated on the coffee commodity that has a high demand in the international market, in this case Arabica coffee. Furthermore, to avoid changes in the exports volume of coffee were negative, which occurs as the effect of product competitiveness in the international market, it is necessary to improve the quality of products that meet the criteria of the international market demand. Then, to avoid the occurrence of negative changes in export volumes, which occurred as the effects of the world export growth, there should be a reduction in the volume of exports in the world imports has decreased, namely by way of export stocks. And to avoid the negative export volume changes that occur as the effects of the distribution market, it is necessary to secure export market before export activities carried out, namely by choosing a country that has a high import growth.

To reduce the dependence of coffee marketing on export markets, especially within the framework to anticipate changes in a negative exports as the effects of the world exports growth, commodity composition, market distribution, and competitiveness, it is necessary to encourage the domestic consumption.

References

- Aggrawal, M.R. 1982. Export Earning Instability and Economic Development in Less Developed Countries. A Statistical Verification. *The Indian Economic Journal*.
- Anonymous. 2002. Indonesian Coffee Magazine. Edition of 103/Yr IX/January
- Anonymous. 2004. Indonesian Coffee Magazine. Edition of Edition of 121/Yr. XI/July-August
- Armington, P.S. 1969a. A Theory of Demand for Products Distinguished by Place of Production. *International Monetary Fund Staff Papers*, 16(68:159-178).
- Indonesian Exporting Coffee Association (AEKI), Jakarta, Indonesian Coffee Statistics. 2000-2003.
- Indonesian Exporting Coffee Association (AEKI), Jakarta, Indonesian Coffee Statistics. 2003-2005.

- Indonesian Exporting Coffee Association (AEKI), Jakarta, Indonesian Coffee Statistics. 2005-2007.
- Indonesian Exporting Coffee Association (AEKI), Jakarta, Indonesian Coffee Statistics. 2009-2011.
- _____ 2001b. Vietnam and Brazil Could be collapse, Indonesian Coffee. September Edition. Jakarta.
- _____ 2004. Javanese Coffee: a World Controlling Story. Indonesian Coffee. Edition. July-August. Jakarta
- _____ 2005, Indonesian Coffee faces Low Production Challenges. Indonesian Edition. May-June, Jakarta.
- _____ 2012. Geographic Indication Requirements for Protection of Gayo Coffee (MPKG).
- Baldwin, R.E, 2000, Trade and Growth: Still Disagreement About The Relationship. *Economics Department Working Papers*.
- Ballasa, Bela. 1965. Trade Liberalisation and Revealed Comparative Advantage. *The Manchester School of Economics and Social Studies*, vol.33,no.2.
- Bowen, H. and J. Pelzman, 1984. US Export Competitiveness: 1962-1977. *Applied Economics*, 16(2):461-473.
- Case and Fair, 2002. *Principle of Macro Economics*. PT. Prenhalindo, Jakarta.
- Chand, S. 1999. Trade Liberalization and Productivity Growth; Time-Series Evidence from Australian Manufacturing. *Economic Record*.
- Checholiades, Miltiades. 1990. *International Economics*. McGraw-Hill International Editions Economics Series.
- Chen, K. and Y. Duan. 1999. Competitiveness of Canadian Agri-food Exports Against Competitors in Asia: 1980-97. *Department of Rural Economy, Faculty of Agriculture and Forestry and Home Economics*, University of Alberta, Edmonton.
- Chenery, Hollis and Moises Shirquin. 1975. "Patterns of Development" Published for the World Bank Oxford University Press.
- Dewi Angraini, 2006. Factors Influencing Coffee Demand from Indonesia to USA. *Unpublished Thesis*. Graduate Program. Universitas Diponegoro. Semarang, Indonesia
- Directorate General for Plantation Production. 2001. *Statistic of Robusta Coffee Plantation*. Jakarta. Indonesia
- Djaja, K. 1992. *Export Performance and Export Demand of Indonesia Forest Products*. Unpublished Dissertation, Iowa State University, Ames, Iowa, USA
- Evenson, R.E, and L. Singh, 1997. *Economic Growth, International Technological Spillovers, and Public Policy: Theory and Empirical Evidence From Asia Discussion Paper 777*. Economic Growth Center, Yale University, USA
- Fafchamps, M. 2000. Engines of Growth and Africa's Economic Performance. Department of Economics, Oxford University. USA
- Fleming, J. and S.C. Tsiang, 1956. Changes in Competitive Strength and Export Shares of Major Industrial Countries. *IMF Staff Papers*, 5(1956):218-248.
- Galina, An Galina and Murat F. Iyigun. 2003. "The Export Skill Content, Learning by Exporting and Economic Growth." (*Journal*) Department of Economics, University of Colorado.
- Grubel, H.G. 1977. *International Economics*. Richard D. Irwin, Inc., Illionis.
- Gujarati, Damodar N. 1995. *Basic Econometrics*. Third Edition. McGraw-Hill Inc., Singapore.
- Gunawan Sumodiningrat. 1999. *Introduction to Econometric*. Publishing Division of Faculty of Economics, Gajahmada University, Yogyakarta, Indonesia
- Hady, Hamdy. 2001. *International Economics, Theory, and International Trade Policy*. Ghalia Publishing Agency, Jakarta, Indonesia
- Hahn, Chin Hee. 2003. "Exporting and Performance of Plants: Evidence from Korean Manufacturing." (*Journal*), *Korean Development Institute*, Korea.
- <http://comtrade.un.org>
- <http://www.ico.historical.asp>
- <http://www.ico.org/new.historical.asp>,
- <http://www.mongabay.com/commodities/price-charts/tea-price.html>.
- International Trade Centre-UNCTAD/WTO. 2002. *Coffee: An Exporters' Guide*. United Nations, New York.
- Ito, S, D.T Chen and E.W.F. Peterson. 1990. Modeling International Trade Flows and Market Shares for Agricultural Commodities: A Modified Armington Procedure for Rice. *Agricultural Economics*, 9(1993):347-356.
- Jayme, F.G. 2001. *Notes on Trade and Growth*. Texts for Discussion.
- Johnson, P.R., T. Grenes and M. Thursby. 1977. Devaluation, Foreign Trade Controls and Domestic Wheat Price. *American Journal of Agricultural Economics*, 59(4):619-627.
- Johnson, P.R., T. Grenes and M. Thursby. 1979. Trade Models with Differentiated Products. *American Journal of Agricultural Economics*, 61(1):121-127.
- Keller, W. 2000. Do Trade Pattern and Technology Flows Affect Productivity Growth? *World Bank Economic Review*.
- Krugman, P.R and M. Obstfeld, 1991. *International Economic: Theory and Policy*. Second Edition. Harper Collins USA.

- Krugman, Paul R and Maurice Obstfeld. 2000. *International Economics. Theory and Policy*.(International Edition). Addison-Wesley Publishing Company, New York.
- Kustiari, Reni. 2007."The Market Development of Indonesian Coffee Market and Its Implication for Indonesia. *Agronomic Research Forum*. Vol.25.No.1, July.
- Kustiari, Reni. 2007. Economic Analysis Regarding Position and Prospect of Indonesian Coffee in International Market. *Unpublished Disertation. Graduate Program. Bogor Technology Institute. Bogor. Indonesia*.
- Lamo, Muchtar 2005. The Export Performance Analysis of Competitive Agricultural and Industrial Sector and Its Role on Gross Regional Product in South Sulawesi Province, Indonesia. *Unpublished Disertation. University of Padjadjaran. Bandung. Indonesia*
- Learner, EE and R.Stern, 1970, *Quantitative International Economics*. Aldine Publishing Company, Chicago.
- Lewin, B., D. Giovannucci and P. Varagis. 2004. Coffee Market: New Paradigms in Global Supply and Demand. *Agricultural and Rural Development Discussion Paper 3*.The World Bank, Washington, D.C.
- Lindert, P. H. and Ch. P. Kindleberger, 1993. *International Economics* (Translated by Burhanuddin Abdullah). 8th Edition. Erlangga Publishing Agency. Jakarta. Indonesia.
- Lipsey et.al.1997. *Introduction to Micro Economics. Vol 2. 10th Edition*. Binarupa Aksara Publishing Agency. Jakarta. Indonesia
- M.E Perseveranda 2005. The Demand Analysis of Coffee Export of East Nusa Tenggara Province to Japan. *Unpublished Thesis*. Universitas Diponegoro. Semarang, Indonesia
- Malian, A.H. 2003. The Export Analysis of Indonesian Agriculture and Agricultural Industry Sector, 1983-1997: *Macro Economic Model for Agriculture*. Unpublished Thesis. Graduate Program, Faculty of Economics, Universitas Indonesia.
- Meire, Grald M. 1995. *Leading Issues in Economic Development*. Sixth Edition, Oxford University Press, New York.
- Mubyarto. 1991. *Introduction of Agricultural Economics*. Third Edition. Social Economy Publishing Agency, Jakarta, Indonesia..
- Muhammad, H.A. and S. Habibah. 1993. The Constant Market Share Analysis: An Application to NR Export of Major Producing Countries. *Journal National Rubber Research*, 8(1):68-81.
- Nopirin. 1971. The Major Factors Affecting Instability of Export Proceeds in Indonesia 1960-1968, *Unpublished Thesis*. Master of Art in Economics, University of Philipine, Quazon City.
- Porter, Michael E. 1998. *The Competitive Advantage of Nations*. Macmillan Press.London.
- Richardson J. David. 1971. "Constant Market Share Analysis of Export Growth." *Journal of International Trade*. David Greenaway, ed. MacMillan Education, Hongkong.
- Robert McStoker. 1987. The Indonesian Coffee Industry. *Bulletin of Indonesian Economic Studies*.
- Rohayati Suprihatini, 2005. The Competitiveness of Indonesian Tea in the World Market. *Jurnal Agro Ekonomi*, Volume 23 No 1. Indonesian Plantation Research Institution, Bogor, Indonesia. 16151.
- Salvatore, D. 1995. *International Economics*. Fifth Edition. Prentice Hall International. Inc., New Jersey. USA.
- Santosa, Hari Siswoyo. 1999. The Export Comparative Advantage Analysis of Na-Oogst and Voor-Oogst tobacco Commodity in the District of Jember, Indonesia. *Unpublished Thesis*. University of Padjadjaran, Bandung, Indonesia
- Schuh, G.E. 1991. Open Economics: Implication For Global Agriculture. *American Journal of Agricultural Economics*. 73 (5) 1322-1329.
- Sihotang, J. 1996. The Supply and Demand *Analysis of Indonesian Coffee in Domestic and International Market*. Unpublished Thesis Magister of Science. Graduate Program. Bogor Agricultural Technology, Bogor, Indonesia
- Sulistiyo. 1981. *International Economics (International Trade Theory). Book I, Second Edition*. Liberty Publishing Agency. Yogyakarta. Indonesia
- Sulistyowati and T. Wahyudi. 1998. People Based Coffee Trading. *Coffee and Cacao Research Center News*, 15(1):23-33.
- Tambunan, Tulus 2000. *Trade and Balance of payment Theori : Theory and Empirical Findings*. LP3ES, Jakarta, Indonesia
- Tatakomara, Edwin, 2004. *The Analysis of Factors Influencing the Export of Tea Commodity and the Competitive Advantage of Tea Commodity in International Market*. Faculty of Agriculture, Bogor Agricultural Technology, Bogor, Indonesia
- Yang, S. and W. Koo. 1993. A. Generalized Armington Trade Model: Reaspecification, *Agricultural Economics*, 9(2):347-356.