

Indonesia-Malaysia-Thailand Agricultural Product Exports: A Comparative Analysis

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Abstract

The agricultural sector has a significant role in Indonesian economy which should be given serious attention by its government, especially those are related to the management and utilization of strategic results in particular food provision. It is hoped that the agriculture sector can provide more benefits and be consumed by the entire population of Indonesia as well as to transform the national economic structure from the agriculture sector to the industry sector process. The data used is time series data during the 2013-2017 period obtained from DEPTAN, BPS, FAO, Bank Indonesia, and the world Bank. The analytical methods used are Trend analysis as well as influence analysis with the analytical models of Ordinary Least Square (OLS), and Auto Correlation Models. The results showed that Indonesia's trade in cooperation and integration of the Indonesia – Malaysia – Thailand Economic triangle (IMT-GT) trend was improving each and every time, and altogether there was an influence Revenue of the importer countries, the population of importers and exchange rate of the volume of exports of Indonesian agricultural products in given period.

Keywords: Trade Balance, Export, Import, Gross Domestic Product

1.0 Introduction

The agricultural sector has an important role in the Indonesian economy that needs attention from the government. Isbah et al. (2016) present the agricultural sector as one of the important economic sectors and should be a concern in national development. The management and utilization of agricultural products become strategic programs especially related to food commodities. Furthermore, the position of agriculture sector in the economy is an integral part of the national economic development, so that the results of the study of economic development can demonstrate how the mechanisms of interconnectedness between agricultural and industrial development and services. Utilization and proper management of agricultural products is also highly desirable; which well-planned programs will increase the added value that will be enjoyed by all Indonesian people.

The success of agricultural development, especially in increasing revenues and the availability of food staple society, will spur the development of industry and service sectors and accelerate the transformation of national economic structures. Empirical evidence also shows that the toughness of the industrial sector will be more robust when it is supported by the development of a resilient and sustainable agriculture sector. As result, it creates the linkage among agriculture, industry and services (agribusiness agency, 2000 in Isbah et al. 2016).

The role of the agricultural sector in the economy of a country or an area can be seen from several aspects such as the agriculture sector contribution to gross domestic product (GDP), job opportunities, the provision of food menu diversity that also affects the consumption and nutrition patterns of the agricultural sector to support the development of upstream and downstream industries, and the ability to export agricultural products to the increase of foreign exchange. The agricultural sector is a highly strategic factor that is also the economic base of the people in the rural areas. This sector is in the life of most of the population, absorb more or less the total workforce even becomes a security valve during the economic crisis in Indonesia (Arifin, 2004).

Agricultural products are one of the most important export commodities in Indonesia, as well as the source of income of most of Indonesian people, which is also as a driver of national economic growth. The Central Statistical Agency (2017) publishes that the agricultural sector in Indonesia is experiencing a significant growth compared to the same period in the previous year, where overall growth increase occurred in all agricultural products except horticultural and Sub-food crop sector experienced the highest growth of 12.96%. From the source aspect of national economic growth, in the quarter I-2017 the agricultural sector contributed to GDP at 13.59% with a growth of 7.1% (year on year). Furthermore, the export performance of agricultural sector is very good in 2017, in which year the value of export of agriculture sector reaches Rp 440 trillion.

Increasingly increased world demand for agricultural products annually seems to be a great opportunity for Indonesia to put themselves as the main exporter of world in agricultural products since its wealth of natural resources are still abundant and the extent of productive land can be managed well. Governmental programs in the form of intensification and extensibility to encourage increased agricultural productivity not only could fulfil domestic food demand, but also it can be exported to increase foreign exchange.

2.0 Research Methods

Data of this research is obtained from the scientific publications of offices and institutions related to the research themes such as from FAO (Food and Agriculture Organization), Central Bureau of Statistics (BPS), Ministry of Agriculture, Ministry of Industry and trade, Bank Indonesia and from the World Bank. Secondary data, in the form of time series of export volume of agricultural products Indonesia, revenue per-capita Country Importer, exchange rate (Exchange rates) as well as the population of the country's population importer from 2013-2017 are used.

Analysis conducted to see the role of trade balance in Indonesian agricultural sector in the cooperation and integration of economic triangle Indonesia – Malaysia – Thailand (IMT-GT) in both the short and long term analysed by Trend analysis as well as influence analysis with Ordinary Least Square (OLS), and Auto Correlation Models. Modifications of some of the independent variables of structural equations in this study are as follows.

$$Qdt = \beta_0 + \beta_1 It + \beta_2 ERt + \beta_3 Popt + e$$

$$\text{Log } Qdt = \beta_0 + \text{Log } \beta_1 It + \text{Log } \beta_2 ERt + \text{Log } \beta_3 Popt + e$$

Where:

Qdt = export volume of Indonesian Agricultural Products (thousand tons)

It = importer country per capita income (US \$)

ERt = exchange rate (Exchange rate) of rupiah

Popt = population of importing countries (souls)

β_0 = constant

$\beta_1\beta_2\beta_3$ = regression coefficient
 μ_t = an error term

3.0 Findings and Analysis

3.1 Indonesian Agricultural Products Trade Balance

Comparison of trade balance of Indonesian and Thai agricultural products in IMT-GT cooperation is a comparative representation of the role of Indonesia's agricultural sector to promote the increase of national economic growth. Table 1. illustrates the Indonesian agricultural sector trade balance in cooperation and integration of the economic triangle of Indonesia – Malaysia – Thailand IMT-GT.

Table 1: Indonesia Agricultural Sector Trade Balance with Malaysia (NPIM) And Thailand (NPIT) Period 2013-2017

Period (years)	NPIM (US\$)	NPIT (US\$)
2013	1,339,061.10	-5,399,649
2014	618,703.60	-4,691,838
2015	1,248,378.30	-3,418,180
2016	1,291,383.10	-3,990,869
2017	1,787,461.30	-3,756,101

Table 1. It is seen that the trade balance of Indonesian agricultural products in Malaysia (NPIM) in a trend IMT-GT cooperation is positive and fluctuating means the number of exports of Indonesian agricultural products to Malaysia in the period 2013 up to 2017 is greater than its import value. There is a surplus with an average value of growth of 22.4% per year. Furthermore, the growth trend of the Indonesian agricultural product trade balance with Malaysia continues to increase with the understanding of the countries continue to spur the value of exports and suppress imports from Malaysia.

The trade balance of Indonesian agricultural products with Thailand (NPIT) in the same period trend is negative and fluctuating where the number of Indonesian agricultural product exports to Thailand is smaller than the value of imports. So, there is a deficit with the average value of growth -7.35% per year. However, the growing trend of its defence growth illustrates that Indonesia continues to spur exports and suppress imports from Thailand.

3.2 Influential Factors of agricultural products export in Indonesia

3.2.1 Malaysia

Results of regression analysis to get any factors affecting the volume of exports of Indonesian agricultural products to Malaysia in cooperation and integration of economic triangle Indonesia – Malaysia – Thailand IMT-GT in research can be seen in table 2 as follows:

Table 2: Regression Analysis Results of Factors Affecting the Export of Indonesian Agricultural Products to Malaysia Period 2013-2017

Model	Coefficients ^a							
	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	-.381	40.655		-.009	.994			
ItMYS	.176	4.864	.042	.036	.977	-.225	.036	.025
ERtMYR	-1.156	4.171	-.267	-.277	.828	-.099	-.267	-.194
PoptMYS	8.661	10.253	.751	.845	.553	.657	.645	.591

a. Dependent Variable: Qdt

Table 2 explains:

1. The results statistical analysis shows that the first variable that is revenue of the state importer Malaysia, obtained the value of the standardized Coefficients 0.042, the result is explained if the importer's income increased by 1% then the volume Indonesian agricultural product exports will experience an increase of 4.2 percent assuming other variables are considered constant. The result of the statistical analysis is also partially acquired T-calculate of 0.036 smaller than α (0.05) with a rate of 95% confidence meaning the state Revenue Importer (Malaysia) affects Significantly to the volume of product exports Indonesian agriculture.
2. While the exchange rate variable obtained the coefficient value Regresinya-0.267, the result explains where if the Rupiah exchange rate against the Ringgit increased 1% then the volume of exports of Indonesian agricultural products to the country will be decreased by 26.7%. The next of T-Count obtained amounted to-0.277 with a negative direction and greater than α (0.05). The results pointed out that the exchange rate did not affect the volume of exports of Indonesian agricultural products to the country.
3. Variable regression coefficient number of population of Malaysian importers amounting to 0.751 explaining where the Malaysian population increased by 1%, then the volume of exports of Indonesian agricultural products to the country will experience an increase of 75.1%, whereas from the analysis is partially acquired T-calculate of 0.845 greater than α (0.05) with a confidence rate of 95% and the results explained that the number of citizens of the Malaysian importers has no effect significant Export volume of Indonesian agricultural products.

The overall test result on the volume of exports of Indonesian agricultural products to Malaysia obtained the value of coefficient of determination (R^2) of 0.511, the value explained that there are about 51.1% the volume of exports of Indonesian agricultural products to the country is explained by the income of the importers of the country, exchange rate and population of national importers, while the remainder (49.9%) specified by other free variables outside of the analysis model used.

Table 3: Regression Analysis Results of the Magnitude of the Effect of the Tested Variables On the Volume of Exports of Indonesian Agricultural Products to Malaysia in 2013-2017 Period

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.715 ^a	.511	-.956	.18378	.511	.348	3	1	.811	3.420

a. Predictors: (Constant), Popt, ERt, It

b. Dependent Variable: Qdt

To see the level of significance influence of the overall variable income per capita of importers, exchange rate, and population of citizen's importers together with the volume of exports of Indonesian agricultural products to Malaysia also is used F-test test as in table. 3 above, where from the value of Sig. F Change obtained the value of 0.811 and the value is much greater than α (0.05). These results at the same time indicate that the free variables in this model together do not significantly affect the volume of export of Indonesian agricultural products to Malaysia.

3.2.2 Thailand

What factors do affect the volume of exports of Indonesian agricultural products to Thailand in cooperation and integration of the Indonesian-Malaysian-Thai Growth Triangle Economy (IMT-GT). See table 4 as following:

Table 4: Regression Analysis Results of Factors Affecting the Export of Indonesian Agricultural Products to Thailand in 2013-2017 Period.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
	B	Std. Error	Beta			Zero-order	Partial	Part
1 (Constant)	-3.734	6.775		-.551	.679			
ItThai	-.901	3.099	-.215	-.291	.820	.399	-.279	-.111
ERtTHB	5.534	5.503	.839	1.006	.498	.834	.709	.383
PoptThai	.762	1.292	.330	.590	.661	.729	.508	.225

a. Dependent Variable: Qdt

This Table 4 also explains that:

1. From the results of statistical analysis above, the first variable shows the state revenue of Thailand importers obtained standardized coefficients of -0.215. This result is explained if the revenue of state importers (Thailand) has increased by 1% hence the volume of export of agricultural products Indonesia will experience a decrease of 21.5% with the assumption of other constant variables. The results of the analysis are partially acquired T-Calculate of -0.291 greater than α (0.05) meaning that the country's revenue variable Importer (Thailand) has no significant effects on the volume of exports of Indonesian agricultural products during given period.

2. Results of analysis of exchange rate is obtained the value of the coefficient 0.839, which explains if the Rupiah exchange rate against the Thai Bath increased by 1% then the volume of exports of Indonesian agricultural products to the country will be increased by 83.9%. Whereas a partial of T-count obtained by a value of 1.006 greater than α (0.05) means there is no influence of exchange rate on the export of Indonesian agricultural products to Thailand in the period of analysis.
3. While the results of the analysis on the variable number of the country's population importer of Thailand obtained regression coefficient of 0.330, this result indicates if the number of Thai population increased by 1%, then the volume of exports of Indonesian agricultural products to the country will experience an increase of 33%. Whereas a partial of T-count obtained by a value of 0.590 greater than α (0.05) means there is no influence between the population of importers (Thailand) of the volume of exports of agricultural products Indonesia to the country.

The overall test result on the volume of exports of Indonesian agricultural products to Thailand as in table 5 below explains that the value of coefficient of determination (R^2) amounted to 0.855, this means that there are about 85.5% product export Volume Indonesian agriculture to Thailand can be explained by the income of the country of importer, exchange rate and population of the importer, while the remainder (14.5%) is determined by other free variables outside the analytical model used.

Table 5: Regression Analysis Results of the Influence of Variables Analysed Against the Volume of Exports of Agricultural Products Indonesia to Thailand in 2013-2017 Period

Model Summary ^b										
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.925 ^a	.855	.420	.06151	.855	1.964	3	1	.473	2.891

a. Predictors: (Constant), Popt, It, Ert

b. Dependent Variable: Qdt

To see the level of significance influence of the overall variable income per capita of country importers, exchange rate, and population of citizen's importers together with the volume of exports of Indonesian agricultural products to Thailand, it is used F-test test as it depicted by table 6 follows:

Table 6: F-Test Test Results to See the Overall Level Significance Impact of the Variables Analysed in 2013-2017 Period

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.022	3	.007	1.964	.473 ^b
	Residual	.004	1	.004		
	Total	.026	4			

a. Dependent Variable: Qdt

b. Predictors: (Constant), Popt, It, ERT

The F-count sig value obtained by 0.473 is much larger than α (0.05). The result shows that the free variables in this model do not have significant effect on the volume of exports of Indonesian agricultural products to Thailand.

From the results of the research obtained that the comparative trade balance of national agricultural commodities continues to be pushed towards the positive with an increasingly improved trend, especially in the trading transactions in cooperation and Economic integration of the Indonesia – Malaysia – Thailand Growth triangle (IMT-GT) in the period 2013-2017. This kind of Trend is considered very good and positive because Indonesia is famous as an agrarian country that has a comparative and competitive advantage in agriculture sector.

Agricultural commodities are an essential commodity in terms of the economy because the agriculture sector is a sector that can drive the increase of national GDP from international trade transactions. Foreign exchange acceptance of agricultural commodities products will contribute to the increase of foreign exchange if the export value is greater than the value of imports on the commodity.

4.0 Conclusion

From the results of comparative research analysis, as well as from regression analysis to determine what factors affect the export of Indonesian agricultural products in the cooperation and integration of the economic triangle of Indonesia – Malaysia – Thailand (BMT-GT), it can be concluded that strengthening the needs of national food is crucial, especially how the Indonesian Government's strategy and policy to encourage the development of agricultural sector through the increase of exports and to suppress import of agricultural products. Trade balance of Indonesian agricultural products with Malaysia in cooperation (IMT-GT) trend is positive (surplus), while with Thailand has a negative trend (deficit).

The results also suggest that the income of Malaysia has a significant effect on the volume of exports of Indonesian agricultural products to the country, while the Rupiah exchange rate against Malaysian Ringgit and population Malaysia has no significant influence on the export of Indonesian agricultural products to Malaysia. The value of further coefficient of determination further explained that 51.1% of the volume of export of Indonesian agricultural products to the country is explained by the income of the importers of the country, exchange rate and the population of the country importers within, while 49.9% are determined by other variables not included in this study.

The results also imply that the income per capita importer (Thailand), the exchange rate of Rupiah against Bath Thailand and the number of residents of Thailand has no significant effect on exports of agricultural products Indonesia to the country, while the overall income per capita importer (Thailand), the exchange rate of Rupiah against Bath Thailand and the number of Thai nationals affects the export of Indonesian agricultural products to the country of 85.5% and 14.5% are determined by other free variables.

Overall, it can be suggested that the Indonesian government should be able to establish appropriate policies in agricultural development to promote the growth of agricultural sectors, increase GDP and community ignorance. Moreover, it is needed to improve the management of agricultural sector that make it possible to produce a high quality products materials and finished product both for export and domestic market.

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