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Research Article

The Value of Copra Exports in Indonesia before the Crisis and After the Crisis: The Effect of Foreign Income and Foreign Prices Using Ordinary Least Square (OLS)

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Abstract: This study aims to analyze the value of copra exports in Indonesia before the crisis and after the crisis: The effect of foreign income and foreign prices. The data used is the annual time series of foreign income and foreign copra prices obtained from Directorate General Of Estate, Federal Reserve Economic Data, world bank and Ministry of Trade, The time period covered is 1980-2016. The Ordinary Least Squares (OLS) method was used to estimate the value of copra exports by adding a dummy variable with a value of zero for the period before the 1998 crisis and one for the period 1998-2016. The choice of the OLS method was based on the stationarity test where all variables were found to be cointegrated at the level. The results of the analysis show that only foreign income and the dummy crisis affect the value of Indonesia's copra exports. When the sample is divided in two, it is found that for the period before the crisis, foreign income and copra prices have no significant effect. For the period after the crisis, only foreign income affects the value of Indonesia's copra exports. The implication of this finding is that Indonesia can target greater copra exports to export destination countries that have relatively high economic growth rates.

Keywords: Foreign income, foreign copra prices, economic crisis, copra exports.

INTRODUCTION

The global crisis is a source of problems in most countries in the world and if it look at it from several news sources, it will announce that this crisis will be burdensome for affected countries. In 1997 Indonesia was one of many countries whose many economic sectors were affected by the crisis.

The global crisis has affected the monetary crisis in Indonesia which has developed into an economic crisis through the destruction of the world banking sectors and spread to banking in Indonesia (Prasetiantono, 2000). In addition, the crisis was also considered to have an effect on international trade.

Apridar (2009) explain that international trade is trade conducted by a country with residents of other countries on the basis of a collective agreement, the intended population can be between individuals resident, between individuals and the government of a country, or the government of a country with other countries. International trade is known in other words namely import-export.

The rapid development of business in various countries or the occurrence of New civilizations in the 19th century after the revolution in England, civilization was greatly influenced by export activities and was also import in this case was mainly export activities (Salvator, 1997).

World trade is also facilitated by various international organizations in supporting their activities, especially export and import such as the World Trade Organization (WTO), Asia-Pacific Economic Cooperation (APEC) and Asian and Pacific Coconut Community (APCC) which the Indonesia have listed as a coconut producing country.

The Current situation becoming a concern for the government to regenerate the improvement of exports in Indonesia, in fact with the decline in the value of oil and gas exports, the government would attempt to increase exports on non-oil and gas lines. Coconut commodity was one of the many non-oil export commodities which had a large contribution to income / foreign exchange income (Kementerian Pertanian Republik Indonesia Direktorat Jenderal Perkebunan, 2016).

In the world, Indonesia is the second largest exporter of coconut products, with the order above was the Philippines, and Indonesia in the top position from other coconut producers such as Sri Lanka, Vietnam and India. the five countries had contributed 71.02 percent in the volume of coconut exports in the world (Badan Pusat Statistik Nasional, 2016).

Problems in decreasing the value of copra exports in Indonesia was due to the fact that coconut production is increasingly dropping from 2014 to the last year of 2016, while the value of copra exports also declined from 2014 to 2016. This matter was conveyed to the quality of coconuts produced, according to normal rules regarding good coconut are worth a, b, and c. the bad value of coconut has an effect on coconut prices and demand. In 2014-2015 the value of copra exports and the volume of copra exports decreased to US $ 46,494, the volume of copra exports decreased by US $ 174,951 and be on the skids in 2016 namely for copra export value by US $ 29,981 and for copra export volume by US $ 281,482.

According to empirical studies was conducted by international and domestic researches, namely Tokuo & Hayato (2017), Yang, Liu, & Mai (2017), Aditama, Yulianto, & Wilopo (2015), Putri, Suhadak, & Sulasmiyati (2016), Mahendra & Kesumajaya (2015), Goldstein & Khan (1978), Putra (2017), Simanjuntak, Arifin, & Mawardi (2017) and Fury (2008) regarding of test the value of copra exports in Indonesia before the crisis and after the crisis: The effect of foreign income and foreign prices, throughout its search, the author did not find previous researches which examined the effect of foreign income, foreign prices and the crisis on the value of copra exports, especially Indonesian copra in before the crisis period, in the crisis period and after the crisis, in this case the researchers only found studies related to this study, namely exports in general and also there are a number of exports specifically outside of this study which explain that there is a positive influence of foreign income on exports, for the foreign prices there are some previous studies that say there are negative influences and there are also some studies that say there is no influence at all. Whereas, in the case of a crisis according to one of the above studies it is said to have a negative effect on export.

LITERATURE REVIEW

International trade is a trading activity carried out by residents in a country with other citizens based on the agreement that has been made together. The benefits obtained in international trade are the main motivation for doing this trade (Salvator, 1997).

Apridar (2009) explains that international trade is the trading carried out by a country with residents of other countries on the basis of mutual agreement. The population intended can be between individual residents (individuals with individuals), between individuals and the government of a country, or the government of a country with other countries.

Exports are efforts to run or sell commodities that we have to other nations or foreign countries in accordance with government regulations by expecting payments in foreign currencies, as well as communicating with foreign languages (M.S., 2003).

According to Sukirno (2008) explained that national income describes the level of state achieved productions achieved in one year and changes from year to year. Whereas according to Reksoprayitno (2000) states that national income is amount of goods and services produced by an economy in a country.

According to Sukirno (2003) The lower the price of an item, the more demand for the item, conversely the higher the price of an item the lower the demand for the item (cateris paribus). According to Lipsey (1995) states the price and demand quantity of a commodity are related negatively. This means that the higher the price of a commodity the lower the demand for the commodity(cateris paribus*)*.

RESEARCH METHOD

Data

The data in this study uses time series secondary data in the form of copra export value, foreign income, foreign prices and economic crisis from 1980 to 2016 sourced from Kementerian Pertanian Republik Indonesia Direktorat Jenderal Perkebunan, Federal Reserve Economic Data, International Monetary Fund, World Bank and Kementerian Perdagangan Republik Indonesia.

The export used in this study is the export value of Indonesian copra expressed in US$. PLN is a Gross National Income, Current U.S. Dolars, Annual 8 trading partner countries aimed at exporting Indonesian copra from 1980 to 2016 which are expressed in US$ and cover countries: Philippines, Bangladesh, South Korea, India, Pakistan, Malaysia, Iran, Australia. The way to collect the value for this foreign income variable is to accumulate by adding up the eight national gross income values and divided to the eight countries. The foreign price is expressed in US$ / Mt. And next Dummy is a variable to see the effect of the crisis, where the value of 0 is given for the period before the crisis (1980-1997), while the value of 1 is given for the crisis period and after (1998-2016).

Analysis Model

Before the formation of Ordinary Least Square (OLS) in long-term equations, the first thing to do was to test data stationarity. This data stationary test aims to avoid false regression or Spurious Regression.

Table 1. Data Stationarity with the Philips-perron test statistic at level

Variable	Model 1	Model 2	Model 3
NEK	NS	NS	NS
PLN	NS	NS	NS
HLN	NS	NS	NS

Description: Significance level below 0.05
Source: Unit root test results, (2018)

Stationary test results at the levels in Table 1 shows that none of the variables are stationary at the level in one, two and three models. Due to the overall non stationary variables at the level, to avoid false (Spurious Regression) and OLS models will able to use, the next step is to test cointegration between all variables.

Table 2. Cointegration Test Results

Unrestricted Cointegration Rank Test (Trace)				
Model	**Hypothesized No. of CE(s)**	**Trace Statistic**	**0.05 Critical Value**	**Prob.****
1	None *	50.93910	47.85613	0.0249
2	None *	39.53864	29.79707	0.0028
3	None *	32.47019	29.79707	0.0240

Source: Cointegration test results, (2018)

The cointegration test results use the Johansen System Cointegration Test is obtained the value of Trace Statistics > Critical Value at a significance level of 5 percent. Based on the results of these tests, in each period in the short term, each variable in the study will balance each other in order to obtain a long-term balance, so that the model in this study can be said to be cointegrated. Thus, the OLS method can be used with time series data that is not stationary.

Stages in Ordinary Least Square (OLS) testing are stationary test, cointegration test, and OLS estimation. In estimating the model, the model equations in this study are as follows:

$$NEK_t = \beta_0 + \beta_1 PLN_t + \beta_2 HLN_t + \beta_3 DUMMY_t + \mu i_t \quad \text{..... (3.5 a)}$$
$$NEK_t = \beta_0 + \beta_1 PLN_t + \beta_2 HLN_t + \mu i_t \quad \text{..... (3.5 b)}$$
$$NEK_t = \beta_0 + \beta_1 PLN_t + \beta_2 HLN_t + \mu i_t \quad \text{..... (3.5 c)}$$

Dimana:

NEK_t = The Value Of Copra Exports in t period
PLN_t = Foreign Income in t period
HLN_t = Foreign Price in t period
$DUMMY_t$ = dummy crisis in t periode
β_1, β_2, dan β_3 = *Parameter*
μ_i = *Error Term*
t = Number of observations used

The Equations will be provided to 3 different OLS model specifications. The first model is equation 3.5a which analyzes the influence of PLN, HLN and the crisis dummy on the NEK from 1980 to

2016. The second model is the 3.5b equation where this model still uses the same variables except the crisis dummy with samples from 1980 to 1997. The third model is 3.5c equation where this model also still uses the PLN, HLN variable to NEK except the crisis dummy with a sample of data from 1998 to 2016. The first model with a dummy is intended to identify the effect of the 1998 economic crisis. The second model is to see the influence of independent variables before the crisis and the third model for the period after the crisis.

RESULTS AND DISCUSSIONS

The results of the analysis of the three specifications can be seen in Table 3:

Table 3. Results of Estimated Copra Export Value (NEK) with 3 Different Specifications

Variable	Model 1 Sample 1980 - 2016	signifikan	Model 2 Sample 1980-1997	signifikan	Model 3 Sample 1998-2016	signifikan
C	34773.03	S	51938.04	S	7844.745	NS
PLN	6.78e-08	S	-1.49e-09	NS	6.44e-08	S
HLN	-22.58665	NS	-42.63167	NS	-16.21027	NS
DUMMY	-24910.55	S	-	-	-	-
R-Squared	0.483150		0.232285		0.653429	
Adjusted R-Squared	0.436164		0.129923		0.610108	
S.E. Of Regression	9498.876		9575.645		9021.835	
S.D. Dependent Var	12650.15		10265.72		14448.50	
F- Statistik	10.28278		2.269254		15.08332	
Prob(F-Statistic)	0.000063		0.137721		0.000208	
Dw	1.637289		1.502218		1.951034	

Source: OLS Estimation Results, (2018)
Significant at 5 percent

The estimation results shown in Table 3 show that the constants are significantly positive at the 5 percent level only for models 1 and 2. The foreign income variables are significantly positive only for models 1 and 3. The results of the coefficients in model 1 implies that increasing foreign income cause the value of Indonesia's copra exports will increase by 6.78e-08US $, While the coefficient of foreign income in model 3 implies that the increase in foreign income causes the value of Indonesia's copra exports to increase by 6.44e-08 US $.

Significant and positive results in models 1 and 3 are due to increased trading partner country income and consumption will also increase both for productive and non-productive things because the economy tends to be more advanced and faster in production and so on and certainly requires raw materials from the trade partner countries such as copra and this reason is in accordance with consumption theory. In Keynes's consumption theory states that the size of consumption expenditure (C) is based on the size of income (Y) of society.

The estimation results of foreign income variables in models 1 and 3 are in line with several previous research reference sources, namely from Tokuo & Hayato (2017) and Yang, Liu, & Mai (2017) in Japan, Aditama, Yulianto, & Wilopo (2015) and Putri, Suhadak, & Sulasmiyati (2016) in Indonesia, the four studies found a significant influence on foreign income variables on exports. There is no significant foreign income in model 2 is one of the factors because in the pre-crisis period there were other variables unknown and outside of this model 2 which affected the dependent variable, other variables that affected exports, especially copra exports were supported by several studies and theory the previous one which is similar is from Ekananda (2014) which states that the shift in the value of the real exchange rate has a significant effect on exports when viewed from the point of demand.

There are also from Mahendra & Kesumajaya (2015) who found several findings from the side of export supply influenced by investment, inflation, exchange rates, and credit interest rates. Another previous study supporting this statement was Goldstein & Khan (1978) which states that shifting production quantities, domestic prices, exchange rates, export prices, quality of production, technology, capital interest, labor wages, input prices, and capital have an impact which is quite real for exports when viewed from the supply angle.

The estimation results shown in Table 3 explains that the variable foreign price of copra is not significant at the 5 percent level in the first, second and third models. The insignificance of foreign prices in models 1, 2 and 3 is one of the factors because in the previous period of the crisis, when the crisis and after the crisis there were other variables but not yet known and outside of these models that affect the dependent variable.

Other variables that affect exports, especially copra exports, are supported by previous research as in supporting research in the explanation of foreign income variables in model 2 above. The estimation results of the foreign copra price in models 1, 2 and 3 are in line with previous research from Putra (2017) which explains that world coffee prices do not affect to the export. The other previous research from Simanjuntak, Arifin, & Mawardi (2017) states that the price variable of world seaweed has no effect on the export quantity.

Based on the crisis regression output (Dummy) in model 1 is significant and negative. This implies that the increasing crisis caused the value of Indonesia's copra exports to decrease by 24910.55 US $. This is due to the crisis affecting many aspects of the economy in society starting from various macro problems such as drastic increase in unemployment, soaring poverty rates etc. which ultimately lowers the level of productivity, especially coconut production which will lead to low volume of copra exports or copra export value in Indonesia .

The estimation results of the crisis variable (Dummy) in model 1 are supported by previous studies from Fury (2008) explaining that crises (dummy variables) influence the development of processed wood exports. coparisons of various literature review of research results provide an explanation of foreign income, copra prices abroad and the crisis on the value of copra exports in Indonesia. The existence of differences of opinion both significant or not significant and positive results or not from other previous studies with the results of research that the researchers did in fact is not the case at issue.

Different results between the results of previous studies can be due to the taking period in studies with different timeframes that explain different relationships. As well as the condition of a nation with government policies taken by a country that will be different from other countries and special commodities or exports in general cause different values too, so that various conclusions arise and various influences of variables in the economy that often fluctuate will also yield results diverse conclusions.

CONCLUSIONS

1. In Models 1 and 3, positive foreign income towards the value of copra exports in Indonesia but the effect is very small. In Model 2, foreign income is not significant toward the value of copra exports in Indonesia because there are other unrecognized variables in Model 2 that affect the dependent variable in the period before crisis.
2. In Models 1, 2 and 3, the variable of foreign price of copra do not influence to the value of copra exports in Indonesia. Because there are other unknown variables outside of models 1, 2 and 3 that affect the dependent variable in the crisis period, before the crisis and after the crisis.
3. In model 1, the crisis variable (dummy) negatively affects the value of coconut exports in Indonesia.

Recomendations

1. The most influential on the value of copra exports in this study is the economic crisis variable (dummy crisis), the government is advised to maintain a balance and prepare various kinds of policies that are appropriate and profitable from a long time ago to anticipate when there is an instant shock in the economy the goal is that the value of copra exports will maintain its contribution to the country's foreign exchange.
2. For researchers who want to research in the same field it is recommended to add other variables such as: exchange rates, inflation, investment, capital interest and so on and expand sampling for example: Quarterly or monthly and also can extend the range of the year.

REFERENCES

1. Aditama, L. G., Yulianto, E., & Wilopo. (2015). Pengaruh Nilai Tukar dan Produksi Terhadap Volume Ekspor Jahe Indonesia ke Jepang Periode (1994-2013). Jurnal Administrasi Bisnis .
2. Apridar. (2009). Ekonomi International : Sejarah Teori, Konsep Dan Permasalahan Aplikasinya. Yogyakarta: Graha Ilmu.
3. Badan Pusat Statistik Nasional. (2016). Retrieved 2018, from https://www.bps.go.id/
4. Ekananda, M. (2014). Ekonomi Internasional. Jakarta: Erlangga.
5. Federal Reserve Economic Data. (n.d.). Retrieved 2018, from Https://Fred.Stlouisfed.Org/.
6. Fury, C. (2008). Faktor-Faktor Yang Mempengaruhi Ekspor kayu Olahan Di

Indonesia Tahun 1985-2005. Jurnal Fakultas Keguruan Dan Ilmu Pendidikan Universitas Sanata Dharma.
7. Goldstein, M., & Khan, M. (1978). The Supply And Demand For Exports: A Simultaneous Approach. *The Review Of Economics And Statistics , 60* (2), 275-286.
8. International Monetary Fund. (n.d.). Retrieved 2018, from https://www.imf.org/external/index.htm.
9. Kementerian Perdagangan Republik Indonesia. (n.d.). Retrieved 2018, from http://www.kemendag.go.id/.
10. Kementerian Pertanian Republik Indonesia Direktorat Jenderal Perkebunan. (2016). Retrieved 2018, from ditjenbun.pertanian.go.id: http://ditjenbun.pertanian.go.id/
11. Lipsey. (1995). Pengantar Mikro Ekonomi. Jakarta: Binarupa Aksara.
12. M.S., A. (2003). Seluk Beluk Dan Tehnik Perdagangan Luar Negeri. Jakarta: PT. Pustaka Biinaman Presindo.
13. Mahendra, I. G., & Kesumajaya, I. W. (2015). Analisis Pengaruh Investasi, Inflasi, Kurs Dollar Amerika Serikat, Dan Sukuk Bunga Kredit Terhadap Ekspor Indonesia Tahun 1992-2012. E-Jurnal Ekonomi Pembangunan Universitas Udayana .
14. Prasetiantono, A. T. (2000). Keluar Dari Krisis. Jakarta: PT. Gramedia Pustaka Utama.
15. Putra, E. S. (2017). Analisis Pengaruh Produkksi, Harga Dan Kurs Terhadap Ekspor Kopi Indonesia Ke Amerika Serikat (Studi Kasus Tahun 1986-2015). Jurnal Fakultas Ekonomika Dan Bisnis Universitas Diponegoro Semarang .
16. Putri, R. F., Suhadak, & Sulasmiyati, S. (2016). Pengaruh Inflasi Dan Nilai Tukar Terhadap Ekspor Indonesia Komoditi Tekstil Dan Elektronika Ke Korea Selatan (Studi Sebelum Dan Setelah Asean Korea Free Trade Agreement Tahun 2011). jurnal Administrasi bisnis , 35 no 1.
17. Reksoprayitno, S. (2000). Pengantar Ekonomi Makro Edisi 6 . Yogyakarta: BPFE .
18. Salvator. (1997). Ekonomi Internasional. Jakarta: Erlangga.
19. Simanjuntak, P. T., Arifin, Z., & Mawardi, M. K. (2017). PengaruhnProduksi, Harga Internasional Dan Nilai Tukar Rupiah Terhadap Volume Ekspor Rumput Laut Indonesia (Studi Pada Tahun 2009 – 2014). Jurnal Adminitrasi Bisnis , 50.
20. Sukirno, S. (2003). Pengantar Teori Mikro. Jakarta: Raja Grafindo Persada.
21. Sukirno, S. (2008). makro ekonomi, teori pengantar. jakarta: PT. raja grafindo persada.
22. Tokuo, I., & Hayato, N. (2017). Impact Of Exchange Rate Shocks On Japanese Exports: Quantitative Assessment Using A Structural Var Model. Journal Of The Japanese And International Economiec .
23. World Bank. (n.d.). Retrieved 2018, from https://www.worldbank.org/.
24. Yang, W., Liu, Y.-C., & Mai, C.-C. (2017). How did Japanese exports evolve from 1995 to 2014? A spatial econometric perspective. Japan and the World Economy , 41, 50–58.